Does Mother Tongue Make for Women's Work? Linguistics, Household Labor, and Gender Identity

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Abstract:

This paper studies the formation and persistence of gender identity in a sample of U.S. immigrants. We show that gender roles are acquired early in life, and once established, persist regardless of how long an individual has lived in the U.S. We use a novel approach relying on linguistic variation and document that households with individuals whose native language emphasizes gender in its grammatical structure are significantly more likely to allocate household tasks on the basis of sex and to do so more intensively. We present evidence of two mechanisms for our observed associations – that languages serve as cultural markers for origin country norms or that features of language directly influence cognition and behavior. Our findings do not appear to be driven by plausible alternatives such as selection in migration and marriage markets, as gender norms of behavior are evident even in the behavior of single person households.

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1. Introduction

Attitudes and beliefs, often originating among historical populations and perpetuated over time, have been shown to influence a range of current outcomes, including women's relative socio-economic position (Alesina *et al.*, 2013; Fernández, 2011; Voigtländer and Voth, 2012). Economic research often models cultural forces through concepts of group identification, defined along dimensions such as nationality, ethnicity, religion, and gender (Akerlof and Kranton, 2000; Benabou and Tirole, 2011; Clots-Figueras and Masella, 2013). While gender is one of the most salient features of an individual's identity, research has generally not focused on quantifying the acquisition and development of gender identities within the household, a sphere characterized by substantial sex-based divisions in behavior.[1] Studying identity is challenging because observed behavior is both a manifestation of factors like bargaining, incentives, selection effects, and institutional constraints, as well as of how individuals cognitively process their environment.

To study the formation and persistence of gender norms, we examine the allocation of time on the basis of sex within the household among a sample of U.S. immigrants. Specifically, we connect gender roles in the household, as evidenced by sex-specific task specialization, to the intensity of gender distinctions encoded in the grammatical structure of a migrant's native language. This paper contributes to the literature on economics and gender identity and has implications for research examining the association between language and behavior. In terms of gender, we empirically demonstrate that gender norms of behavior are established early in life and that once established, these roles persist, even in the face of competing cultural influences. In terms of language, our results suggest that the grammatical structure of a particular language contains meaningful information about individual behavior and society at large.

In the first section of our empirical analysis, we study task specialization and the allocation of time to household labor as a function of the linguistic background of immigrants. We document that among first generation immigrants in the U.S., those who emigrate from countries where the predominant language has clearly delineated gendered marking in its grammatical structure are significantly more likely to allocate tasks on the basis of sex and to do so more intensively, reinforcing stereotypical gender roles. On the extensive margin, gender marked males are significantly less likely than non-gender marked males to engage in activities like cooking, cleaning, laundry, and care for elderly, while gender marked females are less likely than non-gender marked females to devote time to household finances, shopping, and vehicle repair. These differences remain even after including country fixed effects, controlling for common determinants of time use behavior, labor market participation, and home country characteristics. In other words, even conditional on country of origin, employment status, and earnings, the division of labor in household tasks is more skewed along sex-

[1] An exception is Fernández *et al.* (2004), which documents that female labor force participation in the U.S. was bolstered by growing numbers of men raised in households where their mothers worked. Typically, economic research on gender within the household examines bargaining power and resource control rather than identity and preferences, or is focused on these differences outside the household (i.e. in market outcomes or in political participation.)

based lines among gender marked speakers.

In a second set of exercises, we study the formation of gender identity and examine its persistence over the life cycle. Skewed gender norms are only visible for individuals arriving from countries with gender marked languages and who migrate after childhood, suggesting that gender roles are acquired only at key developmental stages in life. We then examine gender identities as a function of duration of residence in the U.S. Our results suggest that once gender norms are established, time allocation and task specialization are persistently skewed over an individual's lifetime. External influences, such as continued exposure to U.S. culture, if they occur after childhood, appear insufficient to alter established gender identities within the household.

Quantitatively, the skewed division of non-market labor we identify is economically meaningful. In comparison to linguistically non-gender marked households, gender-marked female immigrants devote 9% more time to housework, while gender-marked male immigrants spend 28% less time on housework. As a unit, couples in households with individuals exposed to grammatical gender marking behave similarly to those without gender marking, devoting roughly the same total amount of time tasks like to cooking or cleaning. This means that the behavioral differences we observe represent *allocative* changes in the division of household labor - a shift in favor of a more distinct set of gender roles in the undertaking of a broad range of tasks.

A set of plausible alternative explanations for the relationships we observe could involve labor market specialization, intra-household bargaining, or selection in the marriage and dating market. This does not appear to be the case. We find similar effects after controlling for determinants of migration including the relative labor market conditions for women in an immigrant's home country. We also document evidence of stronger gender norms even in the allocation of time even among the subset of single male and female households. Similarly, when we restrict to the sample of households where both individuals actively participate in the labor market, gender roles in household labor remain skewed on the basis of linguistic characteristics.

This paper sheds new light on the development and persistence of gender roles through the use of gender marking variations across native languages. Our analysis is thus grounded in and has broader implications for research which studies of the interplay between language, gender, and behavior. Evolutionary linguists have argued that both cultural forces and cognitive biases have combined to create linguistic variations (Baronchelli, Loreto and Puglisi, 2014). In terms of culture, grammatical gender may act as a marker, reflecting historical gender norms in a society. For example, the linguist Johansson (2005) argues that sex-based linguistic distinctions may have emerged from selective evolutionary pressure on communication needs related to tool making, reproduction, and the division of labor, suggesting that these forces became embedded in linguistic structure. In terms of cognition, recent research by cognitive psychologists (Boroditsky *et al.,* 2003; Borodistky and Gaby, 2010; Vitevitch *et al.,* 2013) and economists (Chen, 2013)

suggests that a language's structure is not independent of its social meaning and has the potential to directly influence behavior by altering a speaker's cognition. With regards to linguistic gender, languages which require speakers to frequently make sex-based distinctions may reinforce cognitive distinctions between masculine and feminine spheres and influence related behavior.

The patterns we observe could result either from language serving as a cultural marker, or from language having a direct effect on cognition and behavior. We examine multiple pieces of evidence on this point, and while we cannot distinctly prove one mechanism over the other, we are never able to rule out the possibility of language as having a cognitive effect. We undertake a number of exercises to help explain the robust relationship between linguistic gender and gender norms we observe. First, we show that there is an association between gender in language and gender roles across four distinct measures of gender marking. Finding qualitatively similar effects for each linguistic feature makes it less likely that the observed association can simply be explained by other omitted country specific factors, because the set of countries in which people speak languages with particular gendered features varies by measure. Second, we document that that the greater the intensity of gender marking in one's language (i.e. the more pervasive the use of gender in speech), the larger the associated gender inequality in household tasks. Third, we show that each of these grammatical rules only matter when they directly reference biological sex (i.e. the existence of a gender system based on something other than male/female distinctions does not lead to skewed time allocations) consistent with the gendered nature of the language as being the important factor.

Finally, we make use of the linguistic hypothesis known as the "critical period" of language acquisition (Lenneberg, 1967), which has previously been studied in Bleakley and Chin (2004 and 2010) to examine the impact of English language skills on immigrant outcomes. This strategy relies on variation in the age of arrival of immigrants and thus on variation in exposure to specific languages at key stages of life. The critical period hypothesis suggests that mastering a language and its grammatical structure is more easily accomplished in youth (up to around age 9), so that immigrants arriving in the U.S. early in life should be more likely to learn and speak English fluently, while those arriving later in life should be more likely to speak their language of nativity. Using a differences-in-differences approach, we compare the time allocations of gender marked and non-gender marked individuals arriving in the U.S. before and after the critical period.[2] We show that time allocations are particularly skewed along gender lines only for individuals who migrated after the critical period and who did so from a country where they were exposed to a gender marked language. These results are consistent with either with (1) language having a direct impact on behavior or (2) with other cultural forces both being correlated with language characteristics *and* acquired at the same formative ages in youth. In both cases, our results suggest that these features of language can be used as cultural markers with applications beyond this study, for example as a potential proxy or instrumental

[2] Technically, this is a triple difference as we are also ultimately comparing male to female outcomes on the basis of both age at immigration and gender marking as well. We adopt the differences in differences moniker for simplicity.

variables for research on gender outcomes.

Our research is also related to a recent literature incorporating linguistic variables in economic research. For instance, Cavalli-Sforza (2001) and Falck *et al.,* (2010) argue that language acts as a type of institutional memory that encodes aspects of culture. Guiso, Sapienza, and Zingales (2006) document that trust between the respective inhabitants of two countries is affected not only by their geographical proximity but also by the degree of commonality in their languages. Licht *et al.,* (2007) uses the grammar of pronouns as an instrumental variable to study how autonomy, egalitarianism, and mastery in speech exhibit a higher rule of law, less corruption, and better accountability. Tabellini (2008) uses the grammar of pronouns as an instrumental variable to distinguish degrees of morality and identifies a causal impact of these values on institutions. Givati and Troiano (2012) explore the impact of gender marking in pronouns on maternity leave laws and corresponding women's employment outcomes. Chen (2013) investigates whether individuals exposed to the presence of references to future time in a language exhibit more forward looking decision-making. Finally, Gay *et al.* (2014) and Santacreu-Vasut *et al.* (2013) demonstrate that gender specific linguistic characteristics are associated with worse outcomes for women in their access to labor, land, and credits markets and with the implementation of gender political quotas respectively.

The remainder of this paper is organized as follows. Section 2 provides motivation for the study of time use behavior and language. Section 3 describes our data and details the construction of our grammatical indices for analyzing the level of gender distinctions present in languages. Section 4 presents the empirical strategy and results. Section 5 concludes.

2. Background

Large differences in the distribution of household labor between the sexes have been found in the U.S. and abroad (Bianchi *et al.,* 2000; Fuwa, 2004; Freeman and Schettkat, 2005; Aguiar and Hurst, 2007; Burda *et al.*, 2007). Our estimates suggest that for the U.S. population as a whole, the typical female in a two adult household devotes roughly 50% more time to chores like cooking and cleaning than her male counterpart (148 vs. 96 minutes per day). While this gap is magnified in the immigrant population, we compare immigrant households to one another.

Research seeking to distinguish the role of cultural attitudes and beliefs from the confounding influences of the institutional and economic environment often rely on immigrant populations (Fernández, 2011). For instance, studies of immigrants have been used to investigate the vertical transmission of attitudes and beliefs, the extent of cultural assimilation, and the efficacy of horizontal socialization mechanisms such as schooling, religion, and language proficiency (Bleakley and Chin, 2004 and 2010; Bisin and Verdier, 2010).[3] Our focus on language provides ample variation for analysis because immigrants arrive with linguistic

[3] The transmission of these cultural values is thought to involve a combination of behavioral, cognitive and symbolic mechanisms (Bisin and Verdier, 2010; Spolaore and Wacziarg, 2013).

backgrounds characterized by different degrees of gender intensity, have various levels of native language proficiency, experience different lengths of exposure to English, and may choose to teach their mother tongue to their offspring.

Linguistic characteristics present a potential intergenerational transmission mechanism worth studying to inform existing theories of gender identity formation (North, 1990; 1993). Languages may be valuable for understanding the social interaction of language and gender because they differ greatly in the extent to which they make distinctions on the basis of sex in their grammatical structure (Corbett, 1991 and Corbett, 2011; Dryer and Haspelmath, 2011). We consider two aspects of language in particular. First, we examine research consistent with language serving as a cultural marker, reflecting gender norms inherited from the distant past and codified in speech. Second, we discuss research suggesting that gender distinctions in grammar may have a direct cognitive impact on speakers.

Linguists theorize that grammatical structure endogenously developed from the process of biological adaptation and gradually evolved across generations of learners.[4] From an evolutionary perspective, linguistic features may have been selected on the basis of their utility to speakers. Lupyan and Dale (2010) find a strong relationship between language and demographic, historical and social forces. Gender distinctions in particular may have arisen to confer an advantage for reproductive success (Deacon, 1997) or from norms related to the division of labor between the sexes (Johansson, 2005).[5] Wichmann and Holman (2009) classify gendered grammatical structures as especially stable features of language, suggesting that once formalized, these early distinctions become crystallized in the language. In this regard, the presence or absence of gender in a language's grammatical structure may reflect deep historical influences and thus serve as a cultural marker for past gender roles.[6]

Cognitive scientists have noted that aspects of language may directly influence speakers' perceptions and mental representation of the world and as a consequence, their thoughts and behaviors (Boroditsky and Gaby, 2010). For instance, Boroditsky *et al.,* (2003) examine how grammatical gender influences the way speakers of different languages think about inanimate objects, and find that individuals are more likely to assign feminine or masculine features to inanimate objects on the basis of their established grammatical gender. Vitevitch *et al.,* (2013) show that men and women actually cognitively process grammatical gender differently, picking up on statements with own gender references more quickly. Similarly, research in economics by Chen (2013) shows the presence of references to future time in a language is associated with more forward looking decision-making, such as higher levels of saving and healthier behavior. We explore the

[4] A body of research has examined the origins and evolution of human language. Christiansen and Kirby (2003) and Johansson (2005) provide reviews.

[5] Grammatical features force speakers to encode certain aspects of reality at the exclusion of others, so it follows that applying an evolutionary perspective to grammar formation could reveal selective pressures to codify the most relevant aspects of our ancestors' reality, including distant past economic specialization and culture. The most widely accepted explanation of this phenomenon is known as the sociopolitical hypothesis (see Aiello, 1998).

[6] Historical determination means grammatical gender may be also reasonably exogenous to current economic outcomes.

possibility that if a language forces individuals to encode and vocalize gender distinctions more frequently by its grammatical structure, this may serve to reinforce such divisions in other aspects of society, such as in the distribution of household tasks and the perception of gender norms.

3. Data

3.1 *Time Use and Immigrant Characteristics*

Our primary analysis utilizes two sources of U.S. household level data for the period 2003-2012: time use information from the American Time Use Survey (ATUS) and socioeconomic data from the Current Population Survey (CPS). Focusing the analysis within the U.S. dramatically limits the extent to which agents face a heterogeneous set of opportunities and incentives. While immigrants bring with them the attitudes and beliefs of their country of origin, they share a common institutional environment after migration implying that differences in behavior can be attributed to the influence of their origins and not to confounding factors such as market forces, regulations, laws, and the level of discrimination in society.[7]

The CPS is the primary source of information used to construct labor market and earnings data in the U.S. The survey collects information on approximately 54,000 households each month in the U.S. in a rotating panel in which households are surveyed for 4 months, leave the sample for 8 months, and are surveyed again for 4 months. The ATUS collects nationally representative data on the time allocation during the previous day for one respondent individual in each household. Within the household, one individual is randomly selected from the subset of household members 15 years and older to complete the survey.[8] Beginning in 2003, households sampled by the ATUS were randomly selected from the population of CPS respondent households, meaning individuals in the two surveys can be directly linked. ATUS interviews are conducted 2 to 5 months following a household's final CPS interview. Because some important responses such as earnings, employment status, and household composition may change over this period, a number of statistics are collected again in the ATUS, and we use these more recent measures where possible.

We focus on the sample of matched ATUS-CPS households for which the ATUS responded is a first generation immigrant. Table 1 displays summary statistics on 19,458 first generation immigrants in matched ATUS-CPS households for the period 2003-2012. We classify first generation immigrants as individuals who report foreign birth but currently reside in the U.S. The top panel presents respondent demographics, while the middle panel reports a range of respondent labor market statistics, and the bottom panel displays household demographics. Slightly over half of respondents are female, with a mean age of 44. Two-thirds of respondents reporting having a spouse or partner present in the household during the reference day. The educational attainment and racial and ethnic composition of the sample is also reported in Table 1. Just under

[7] It is particularly interesting to study immigrants' linguistic background and post-migration behavior since the value of mastering their mother tongue for themselves and for their offspring changes dramatically when arriving to the US.

[8] Detailed discussions of the ATUS data collection and related issues such as efforts taken to address non-response bias can be found in Horrigan and Herz (2004) and Hammermesh *et al.,* (2005).

half of first-generation immigrants to the U.S. have greater than a high school degree, while 10% report being currently enrolled.[9] Appendix Table A1 reproduces these statistics for the full ATUS sample and for immigrants and compares these groups.

Summary statistics on the pattern of time use among first generation immigrants are presented in Table 2.[10] Columns (1) and (3) present the mean time allocation for males and females among all immigrants, in terms of minutes per day devoted to each activity. Stark differences in gender roles in the household are immediately apparent among immigrant households. On average, women devote nearly 90 more minutes per day than men do to housework (171 versus 81 minutes) and 23 more minutes to care giving (50 versus 28 minutes). At the same time, they report lower amounts of leisure (42 minutes less) and formal labor market time investments (97 minutes less). Within housework activities, there is evidence that households allocate specific roles on the basis of gender. Columns (2) and (4) display the percentage of respondents reporting positive time use on a given activity. For instance, women are more likely to undertake food preparation and cleaning while men are more likely to spend time on repair and maintenance activities and taking care of the lawn, garden, or animals.

These gender gaps are larger for immigrants than for the full ATUS sample (reported in Appendix Table A2). Among all households in the ATUS, women devote more time to housework (52 minutes), shopping (13 minutes), care giving (17 minutes), and less time to leisure (44 minutes) and formal work time (67 minutes). Evidence of gender specific task specialization among native born individuals provides some support for our examination of stereotypically male and female activities, and we focus on the division of labor for these particular tasks in the immigrant population. While gender roles are more pronounced within the first generation immigrant sample than among non-immigrants, it should be emphasized that the following analysis contrasts time use allocations within groups of the U.S. immigrant population and not across immigrants and native born individuals.

3.2 Gender Marking

We assign gender marking characteristics to languages using information compiled from the World Atlas of Linguistic Structures (WALS) (Dryer and Haspelmath, 2011). The WALS has 192 grammatical structure variables, four of which are explicitly related to gender. We employ these measures of grammatical gender as indicator variables:

- Sex-Based (SB): A language's gender system may or may not be linked to biological sex. Examples of non-sex-based gender systems are those based on the distinction between human and nonhuman

[9] Racial and ethnicity categories are coded separately in the data and are thus not mutually exclusive. In the analysis of Section IV we simply include indicators for these individual racial and ethnic categories.

[10] We separate core household labor activities from shopping and childcare. While the latter activities are sometimes classified as household labor, they have been shown to respond differently to factors such as income and education. Nevertheless, these activities also sometimes display a high degree of gender specific allocation in our analysis. Appendix Table B1 contains a complete list of ATUS time use activity classification codes grouped into each category.

(as in Danish) or between animate and inanimate (as in Japanese). We set SB equal to 1 for languages with a biological sex-based gender system and to 0 otherwise.

• Number of Genders (NG): The number of genders in a language is defined as how many noun types may require different forms of agreement. Some languages, such as Nigerian Fula, feature twenty genders. English and German include "neuter" as a third gender, but languages such as Spanish and French feature only two genders (feminine and masculine). NG is assigned a 1 for languages with exactly two genders and a 0 otherwise.[11]

• Gender Assignment (GA): A gender assignment system provides a set of rules to help a speaker make appropriate agreements between nouns and the genders defined by the system. Assignment can depend on the meaning (semantic) or the form of the noun (formal). For example, in Russian, nouns can be assigned masculine or feminine gender as a function of their inflectional class (e.g. whether the noun takes the nominative or the accusative form). GA is set equal to 1 for languages whose gender assignment system is both semantic and formal (and where the assignment of gender is generally more pervasive) and to 0 otherwise.

• Gendered Pronouns (GP): Languages differ in the extent to which they distinguish gender in pronouns. For example, in English the pronominal sex-based gender system is determined by the use of he/she/it, while many languages have a sex-based gender system but lack sex-based pronouns. The dummy variable GP is set to 1 for languages with gender distinction in third-person pronouns and in the first and/or the second person. GP is assigned 0 if the language does not distinguish gender in pronouns (or does so only in the third-person).

These four gender-related variables reflect different features of grammatical gender and can be thought of as capturing different aspects of the usage intensity of male-female distinctions in a particular language. We also form an aggregate index for each language, which we label the Gender Intensity Index (GII), and calculate simply as the sum of the individual indices GII=NG+SB+GA+GP. For example, German's GII is 2: it has a sex-based gender system, SB=1, and assigns gender based on both semantic and formal rules, so GA=1. GP=0 since it assigns gender to third person pronouns only and NG=0 since it has a neuter gender.

The ATUS and CPS do not explicitly ask questions about which language an individual primarily speaks. To overcome this, in our primary analysis, we assign immigrants the gender marking characteristics of the dominant language, defined in terms of the size of the population of speakers, from their country of origin. While this seems like a particularly strong assumption, in Section 4.4 we show that our linguistic assignment strategy produces results which are strongly supported by evidence from alternative datasets which document language spoken within immigrant households.[12]

Summary statistics for these measures using the dominant language of a migrant's country of origin are presented in Panel A of Table 3. Many languages feature more than one aspect of grammatical gender marking, although both the distribution of features and the intensity (total number of gender marking features

[11] Intuitively, in languages with more than two genders, the presence of additional genders decreases the frequency with which speakers must employ the masculine and feminine gender.

[12] Similarly, the results are robust to exercises which may more precisely exploit variation across immigrants in terms of degree of exposure and usage of particular languages.

within a country) varies dramatically across countries. This point is corroborated in the first four rows of Panel C (which tabulates correlations across these indexes) and in Appendix Tables C1-C4, which list the set of countries assigned to each gender marking characteristic and the number of immigrants surveyed by the ATUS from each country.

In the main analysis, we estimate most results for the gender marking indicator variable GA.[13] There are several justifications for focusing on one measure specifically. First, using just one of the indicators simplifies the interpretation of the coefficients and prevents repetition of the results. Second, GA in particular represents perhaps the most pervasively employed of linguistic features as its presence means that all nouns must be assigned a gender (in comparison for example to GP which only captures pronouns). Third, gender assignment exists in both sex-based and non-sex based forms. This means we can run a placebo test of having a gender assignment system that is not based on biological sex and which should not be related to gender roles (we affirm this to be the case in Section 4.3). Finally, all of our results are qualitatively robust to the use of any of the four individual indicators (GA, GP, NG, SB) as well as to the use of the aggregated intensity index (GII), which we demonstrate in Section 4.3.

4. Analysis

4.1 Empirical Strategy

We focus on the sample of first generation immigrants in the ATUS-CPS and estimate the association between gender marking in language and time use across a range of activities with the following general OLS specification:

$$T_{ijkct} = \alpha + \beta_1 GM_C + \beta_2 F + \beta_3 (F \times GM_C) + \mathbf{X}_j \delta + \mathbf{Z}_k \gamma + \mathbf{W}_C \theta + \phi \eta_t + \varepsilon_{ijkct} \quad (1)$$

T_{ijkct} represents time allocated to activity i for individual j in household k who was born in country c and later migrated to the U.S., and was surveyed by the ATUS in year t. GM is our measure of grammatical gender marking, while F is an indicator for female. $\boldsymbol{X}$ represents a vector of individual level controls, including age, age squared, and indicators for education level, for currently enrolled students, and for the presence of a spouse or partner in the household on the survey day. Also included are a range of labor market controls including hours worked and weekly earnings, and indicators for employment, labor force status, government employment, self-employment, and paid by the hour. $\boldsymbol{Z}$ is a vector of household level controls designed to capture the impact of household composition including household size and number of children in the household. $\boldsymbol{W}$ includes controls designed to capture selection associated with having migrated from country c

[13] Although SB may seem like a logical choice of variable, most of the immigrants in the sample come from countries whose dominant language gender system is in some way sex based, even if these distinctions are infrequent, as in English. A clearer interpretation of GA, GP, and NG are as metrics of how pervasively these gender distinctions are embedded in a language's grammatical structure (or how frequently individuals must refer to gender in speech). We further show that when we condition our GA migrants into those with sex-based and those without sex-based linguistic backgrounds, as predicted, only sex-based gender assignment has an associated effect.

to the U.S., including in some specifications, origin country GDP and female labor force participation rate. η is a set of survey year fixed effects. As a robustness check in some specifications we include country of origin fixed effects, in which case the GM term is no longer identified (as it is collinear with these fixed effects), but the interaction term is still identified. In all regressions we cluster standard errors at the country level, except those with country fixed effects, as doing both at the same level may produce unreliably smaller standard errors.

4.2 Language and the Division of Housework Between the Sexes

The results of estimating equation (1) to examine the relationship between total time allocated to housework and the grammatical characteristic of gender assignment indicator (GA) are presented in Table 4.[14] Column (1) includes only the gender assignment variable (and survey year indicators), and produces a small coefficient which is not significantly different from zero. This is important because it suggests that across immigrant households, those with a native language which frequently marks gender do not significantly differ from those which do not, in terms of the total amount of time devoted to household chores. Estimates in column (2) suggest that women in immigrant households bear the brunt of household-related chores and activities in the household, spending on average 93 more minutes per day on these activities than their male counterparts.

Each subsequent column adds additional components of the regression in equation (1). In column (3), we include both GA and female indicators and their interaction. The estimates produced reveal sharp differences in time devoted to housework across linguistic gender assignment status on the basis of sex. These differences are sizeable and significant, suggesting that the grammatical characteristic of gender assignment is associated with much more distinct gender roles. Immigrant women who grew up in countries with gender marking in the primary language allocate *29 minutes more* per day to housework, while males from these countries allocate *24 fewer* minutes per day to these activities *in addition* to the already highly skewed sex-based allocation in the sample of immigrant households which lack gender marking in their language (where women undertake 53 more minutes per day on average). In other words, linguistically gender marked women undertake over 100 more minutes per day of housework than their similarly gender marked male peers.

Column (4) includes a wide range of household and respondent demographic controls, while column (5) shows that the results are robust to the additional inclusion of labor market controls. Even after controlling for all of these factors, gender marked individuals display extraordinarily skewed time allocations. For instance, the fully specified regression of column (5) suggests that gender-marked female immigrants devote roughly 9% more time to housework (16 min. per day), while gender-marked males spend 28% less time (23 min. per day) on these activities (on top of the non-gender marked sex-based difference of 44 min.

[14] Housework is here broadly defined to include the activities listed in the top portion of Table 2. Appendix Table B1 details the exact underlying ATUS categories which we classify as comprising housework.

per day). Stated differently, the division of household labor between the sexes is roughly twice as sharp in gender marked than in non-gender marked immigrant households once we account for other potential determinants of time use.

Contrasting the results of column (1) with those of columns (3) - (5), which include female and female*gender assignment indicators, reveals that at the household level this linguistic characteristic is associated with an *allocative* change in the division of household labor and not merely reflective of differences in preferences across different immigrant households in terms of the total amount of household work to be done. In other words, households with individuals exposed to grammatical gender marking behave similarly as a unit to those without, but internally have much more sharply defined gender roles in housework.

As a further check, column (6) includes country of origin fixed effects. In this case, because we assign individuals the dominant language of their country of origin and this assignment does not vary within country (we explore the robustness of this assumption in Section 4.4), the gender marking variable is no longer identified by itself and is thus omitted. At the same time however, the interaction term is still meaningful. The advantage of including country fixed effects is that their inclusion soaks up a wide range of country level cultural influences that may be otherwise omitted. In this case, reassuringly, the interaction term is largely unchanged from previous regressions, again suggesting that gender assignment in language is associated with much stronger sex-based gender roles in the division of household labor.

4.2 Task Specialization Within the Household

To what extent do we observe specialization across the sexes by narrowly defined tasks? In this section, we extend the analysis of Section 4.1 to explore components of housework in detail as well as to examine a broader set of activities traditionally considered to reflect gender identity norms, such as shopping and caregiving. We first repeat the regression in column (5) of Table 4, but vary the dependent variable to examine time devoted to a wide range of specific housework activities. The three columns of Table 5 present the regression coefficients on indicators for female, gender marking, and their interaction term respectively. Focusing on the interaction term, it is clear that women in gender marked households spend more time on activities like cooking, cleaning, and sewing and proportionately less time on vehicle maintenance, appliance repair, and leisure. Again, these gaps are in addition to the already sizeable gender differences visible on the female coefficient in column (2). This is consistent with stronger emphasis on stereotypical role assignment between the genders.

Appendix Table A3 replicates this analysis using a probit specification to explore gender differences in the likelihood of a respondent undertaking a given activity. We find that women, relative to men, are more likely to undertake cooking, cleaning, and caregiving tasks and less likely to undertake repair and maintenance, lawn care, and leisure activities. These patterns are even more pronounced for households with gender marking. Gender usage in language is associated with changes in both the intensive and the extensive margin -

as established gender identities prescribe not only the amount of time devoted to a given activity but the type of activity undertaken at all. Division of labor on the basis of sex may provide one explanation for why gender roles may be persistent within the household over time, as we document in subsequent analysis. As with any type of specialization, if these non-market tasks are characterized by fixed costs or by a learning curve, then such patterns could be self-reinforcing.

4.3 Linguistic Detail and the Division of Household Labor

Gender assignment represents only one of the ways in which gender can be embedded in a language's grammatical structure. Panel A of Table 6 replicates the regression in Table 4, column (5) for each of the distinct gender features of grammar discussed in Section 3.2. For each of the four gender marking indicator variables, GA, GP, NG, and SB, presented in columns (1) - (4) respectively, the division of household labor is heavily skewed along gender lines in the subset of immigrant households with exposure to the respective grammatical characteristic. The magnitude of the association varies somewhat across measures, but in all cases the impact is precisely estimated and sizeable. This is an important result because the set of countries with each grammatical gender characteristic varies greatly.[15] Finding qualitatively similar effects for each linguistic feature suggests that the observed association is less likely to be explained by other omitted country specific factors, unless these factors are correlated with these grammatical characteristics.[16]

Countries vary not only in whether they codify sex-based distinctions in their grammatical gender system, but also in the intensity with which they do so. Many languages feature multiple gender marking mechanisms in their structure. In theory, the presence of multiple features should represent a more pervasive level of gender distinctions in speech. We should thus expect to find a more skewed time allocation on the basis of gender for migrants from these countries.

Panel A of Table 6 presents results for the association of our aggregated gender intensity index (GII) with time spent on housework in column (5). The estimated interaction term in this case should be interpreted as the effect of moving one point in the intensity index (i.e. of having one more gender marking characteristic on one's native language). In terms of magnitude, the coefficients suggest that moving from no gender marking to a language with all four gender marking grammatical features is associated with women in the household doing 46 more minutes per day of housework and men doing 29 minutes less (above and beyond the additional 44 minutes non-gender marked women already do). In other words, individuals who have exposure to more intensively distinguished gender marking in the language of their native country have time allocations that are more heavily skewed on the basis of gender, consistent with gender marking having a direct association with societal gender roles (either as a causal influence on behavior or as an outcome of

[15] The full list of country assignments is documented in Appendix Tables C1 through C4.

[16] We also obtain results which are both highly significant and qualitatively similar if we instead employ a principal component analysis based on the four gender marking measures (results not shown).

related cultural and historical forces).

The final two columns of Panel A present results for gendered grammatical assignment (GA) where we condition on the immigrant's native language having a sex-based gender system (SB). Logically, having a linguistic gender system should only matter for gender roles if some of those genders are actually based on biological sex. In column (6) we examine the results for first generation immigrants whose native language has a gender assignment system not based on sexual gender, and in column (7) we examine the results for those immigrants whose gender assignment system is based on sex. As predicted, gendered grammatical features are only associated with skewed time along gender lines for languages whose gender system are sex based (SB=1). This supports the interpretation that these features of language are associated with sharper gender norms specifically because they entail distinctions on the basis of biological sex.

4.4 Validity of Our Language Assignment Methodology

As previously noted, the ATUS and CPS data do not contain information on primary language spoken at home. Thus, up to this point we have made the assumption that immigrants either speak or are influenced specifically by the dominant language of their country of origin. The advantages of this approach are that it follows a transparent and straightforward assignment rule, and that it simplifies the interpretation of the coefficients. The clear limitation of this simple rule is that some immigrants are assigned to languages they do not speak. This could bias our estimates, particularly if misallocation varies in systematic ways (as would be the case if for instance migrants from certain countries were more likely to be selected from a particular language group, such as English speakers).[17]

One way to assess whether this strategy is reasonable is to directly obtain information on language spoken by first generation immigrants to the U.S. from an external dataset. We utilize data from the American Community Sample (ACS) survey.[18] The ACS is a nationally representative survey, designed to mimic features of the decennial census on an annual basis. Each round of the ACS includes approximately 1% of the U.S. population (around 3 million individuals annually). We employ 5-year estimates of the ACS from the period 2007-2011. Once we restrict our sample to individuals who report birth outside the U.S. (including those individuals born in Puerto Rico), we are left with a sample of roughly 1.5 million migrants.

The ACS includes self-reported information on language spoken by the respondent at home. By matching countries of origin in the ACS with those in the CPS, this information can be used to obtain a representative estimate of the languages spoken immigrants from countries around the world. We assign these languages their respective features of grammatical gender marking (i.e. which speak a language which has GA=1, GP=1, NG=1 or SB=1) and then calculate a number of shares. Specifically, for each country of

[17] This would be most troubling if for instance immigrants from gender marked or non-gender marked countries were more likely to speak English in the home in the U.S. We address this possibility directly at the end of this section.

[18] The ACS sample provided as the Public Use Microdata Sample (PUMS) includes information collected through the Puerto Rico Community Survey (PRCS) as well.

origin we estimate the share of migrants speaking a language with each gender marking feature, the share speaking a language without this feature, the share speaking a language which cannot be classified, and the share speaking English.[19] The estimates produced are reassuringly similar to the assignment based on dominant language. All four measures using the ACS are highly correlated with those based on the dominant language assumption, with the correlation ranging from 0.88 to 0.92 (Table 3, Panel C).[20]

We replicate our main results, directly employing the shares calculated from the ACS for each of the gender marking measures in columns (1) – (4) of Table 6, Panel B. While the quantitative results differ slightly (most notably for the SB measure), the qualitative pattern is reassuringly similar, with gender marked individuals exhibiting much stronger gender roles in the household. As a final check and to be as comparable to the main exercise as possible, we construct gender assignment GA indicators from the ACS data. Column (5) assigns a country a value of 1 if at least 50% report speaking a gender marked language and a value of 0 if at least 50% report speaking a non-gender marked language. Column (6) raises this threshold to 70% (thus dropping some of the more linguistically heterogeneous countries from the sample). Finally column (7) assigns a value of 1 only for countries where the fraction of gender marked individuals is at least 2x as large as the fraction of non-gender marked individuals and vice versa. In all three cases, the principal results are unchanged.

Finally, a crucial benefit of the individual level data from the ACS is that we can calculate the fraction of immigrants in the U.S. from each country who report speaking English in the household. Because English skills are so important for labor market outcomes, heterogeneity in the share of English speakers across countries of origin could severely bias our results. Fortunately for the analysis, for first-generation immigrants from non-English speaking countries, these values are not especially large. As a check, we have included this share as a control directly in each of the paper's main regressions, but found this change has little impact on the magnitude or significance of our primary findings (results not shown).

4.5 Sample Selection and Additional Robustness Checks

A key concern is that the results may be driven by specifics of the composition of the population of U.S. immigrants. A sizeable share of the U.S. immigrant population is comprised of individuals who have emigrated from nearby locations such as Mexico. These migrants face a lower geographic cost of migration, typically speak a highly gender marked language, and may generally be unrepresentative of the remaining immigration population. We find that the results are both quantitatively and qualitatively similar even when we exclude immigrants from Mexico, immigrants from Mexico and Puerto Rico, all Spanish speaking migrants, or all English speaking migrants (see Appendix Table A4).

[19] Appendix Table C5 reproduces the full set of these results.

[20] Panel B of Table 3 presents summary statistics for the measures of gender marking based on the ACS immigrant sample.

Table 7 presents an additional set of robustness checks. Panel A undertakes a series of sample restrictions related to household demographics and labor market participation to help rule out the possibility that our observed differences in gender specific behavior are due solely to intra-household bargaining power differences or to selection effects. Column (1) restricts the sample to immigrants with a spouse present, while column (2) focuses on a subsample of immigrants that have either a spouse or partner present. The magnitude of the coefficient on the female-gender assignment interaction term is still sizeable and highly significant when we limit to these groups. Column (3) restricts the sample to immigrants who are single. Interestingly, the coefficient on gender marking is still negative while the interaction term with female is even larger than in the previous estimates. This result is important because for these individuals, observing an impact of gender marking in language on behavior should reflect one's own gender identity and preferences and not be related to bargaining power or partner selection. Column (4) presents results for immigrants belonging to households where both spouses participate in the labor market. As can be seen the female-gender assignment interaction term is still sizeable and significant for households with both spouses working in the labor market, suggesting the observed association is not purely driven by specialization into the labor market.

Panel B presents several more robustness checks. Columns (6) and (7) present results additionally controlling for country of origin characteristics. In particular, column (6) controls for female labor force participation rate at the time of migration, since research (Blau *et al.,* 2011) has shown it is an important predictor of immigrants labor market behavior in the U.S. A concern may be that individuals from some countries may be more likely to select the U.S. as a location for migration specifically because labor market conditions are more favorable to women here. Column (7) presents results when controlling for the GDP in the immigrant country of origin. GDP may capture some of the underlying motivation for migration, reducing potential omitted variable bias at the country level, specific to migrants from different countries. In both cases, the estimated coefficient on the interaction term is fundamentally unchanged with the addition of these controls.

An additional issue for interpretation is that the results may be driven by changes in the likelihood of undertaking a task and not in the time spent on the task. In column (7) we restrict the sample to non-zero time respondents to explore whether our main result is driven solely by the extensive margin. While the coefficient on the interaction term decreases in magnitude, it remains meaningfully sizable and strongly significant. Similarly, column (8) presents results using a Tobit regression specification instead of OLS. The estimated coefficient is very close to that obtained in column (7), the sub-sample of non-zero time respondents. These results suggest that gender marking in language matters because it influences both the intensive and the extensive margin of time-use behavior, and are consistent with the evidence from the probit estimates presented in Section 4.2.

5. Formation and Persistence of Gender Identity

5.1 Age of migration

In this section, we examine the formation of gender identity. If individuals acquire very distinct gender roles and bring them to the U.S., then a comparison of migrants with different ages of migration may be informative of the timing for when individuals first develop these norms of behavior. The key challenge for precisely identifying the formation of gender roles using immigrant populations is that migrants arriving at different ages likely do so for very different reasons, creating selection effects. To account for this, we undertake a set of differences-in-differences comparisons - comparing similar migrants to one another, but exploiting variation on the basis of their linguistic background and their age at immigration together. This allows us to isolate the timing of gender identity formation from many other determinants of migrant.

Formally, we rely on a strategy which takes into account a migrant's age at their time of immigration to the U.S. and its relationship to the "critical period" of language acquisition, posited by Lenneberg (1967). The critical period hypothesis argues that individuals learn languages more easily at a young age. Migrating at an early age implies that individuals have less exposure to their native tongue and more exposure to English at key periods for language acquisition and grammatical understanding in particular.[21] Within economics, research has demonstrated that age of migration matters for English fluency with most individuals who migrate before age 9 being fluent in English (Bleakley and Chin, 2004; 2010), so we use this as our starting point for a cutoff.

In particular, we compare differences in the behavior of male and female immigrants who arrived in the U.S. before and after the critical period from countries where the language is gender marked with similar gender differences in behavior observed for immigrants who came to the U.S. before and after the critical period from countries where the language is not gender marked. The logic is that individuals from gender marked countries should be more affected by their native language (or similar correlated cultural influences on gender norms) if they migrate later in life, while those from non-gender marked countries should not be affected by this difference. Instead this second group can act as a reasonable control group for the set of factors which influence both age at migration and the gender division of household work. Empirically, we estimate the following equation:

$$T_{ijkct} = \alpha + \beta_1 GM_C + \beta_2 F + \beta_3 PostCP + B_4 (F \times GM_C) + \beta_5 (PostCP \times F)$$
$$+ \beta_6 (PostCP \times GM_C) + \beta_7 (F \times GM_C \times PostCP) + \mathbf{X}_j \delta + \mathbf{Z}_k \gamma + \mathbf{W}_C \theta + \phi \eta_t + \varepsilon_{ijt} \quad (2)$$

where the variables are equivalent to those in equation (1) with the addition that we now include an indicator for migration after the critical period (here taken to be arrival in the U.S. after age 9 for consistency with

[21] Appendix D provides a discussion of existing research on the critical period hypothesis in linguistics. An alternative explanation is that other cultural forces influence gender norms at the very same time, and we discuss this further below.

Bleakley and Chin, 2010), double interactions of this term with gender marking and with gender, and a triple interaction of this indicator with both female and gender marking.

The results from estimating equation (2) are presented in column (1) of Table 8. The interaction between female and linguistic gender assignment is now insignificant and the triple interaction shows that the previously documented effects were driven by post-critical period migrants from gender marked countries. While the set of immigrants to the U.S. arriving after the critical period do on average slightly fewer minutes of housework per day, women from gender marked countries spend significantly more time than their male counterparts on these tasks. This result suggests that even accounting for many of the factors which may typically affect an immigrant's behavior, distinct gender roles can be captured by exposure to home country characteristics such as language during key periods of life. Column (2) shows that similar results are produced for the interaction terms when we again include country fixed effects in the analysis.

Figure 1 flexibly plots coefficient estimates on the gender marking and female interaction term across individual ages of migration within the sample of first generation immigrations. The overall pattern is again consistent with the critical period hypothesis as the coefficient becomes positive and significant only among immigrants who arrive in the U.S. before the critical period. To get a sense for the magnitude of these effects, Figure 2 presents regression adjusted means of time spent on housework by first-generation migrations. As can be seen from the figure, gender assigned female migrants devote significantly more time to housework, but only if they migrated to the U.S. after the critical period. Those who migrated before are not significantly different from their non-gender assigned migrant peers. Similarly, males who migrate from a country with a dominant language that is gender marked devote significantly less time to these activities, but again, only if they migrate after the critical period.

While our critical period differences-in-differences strategy lends further credence to the possibility that language may causally influence behavior, it cannot entirely rule out language reflecting other cultural forces - provided these influences also manifest at the same critical stage of life as linguistic development. Importantly however, the results of this exercise suggest that individuals develop gender identities early in life, mostly likely around an age of 8-12 years, and that these identities have large consequences for individual behavior. The next section explores the resilience of these identities once formed.

5.2 Time Since Migration

This section studies the speed of assimilation of first generation immigrants by investigating whether the division of time spent in household work between men and women converges to the overall allocation for immigrants that have been living in the U.S. for longer periods of time. We study whether the amount of time elapsed since migration influences the impact of gender marking of the home country language. In theory, exposure to English language and other aspects of U.S. culture may weaken the impact of gender norms established in one's country of origin.

Figure 3 plots the coefficient on the gender marking and female indicator interaction as a function of time passed since immigration. Since the previous section suggested that age at arrival in the U.S. may be an important factor in the development of gender marking impacts, we additionally control for age of immigration in this exercise. The pattern suggests that regardless of how long they have resided in the U.S., increased exposure to U.S. culture fails to diminish roles developed early in life. Instead, these results, coupled with those in Section 5.1 suggest that gender identification, shaped during key stages of youth, is very persistent once established.

V. Conclusion

This paper studies a sample of immigrants in the U.S. to explore the relationship between an immigrant's linguistic background and the division of labor within the household. In particular, we analyze the relationship between the allocation of time across housework and related activities in immigrant households and the intensity of gender marking in the grammar of the dominant language of the countries from which they immigrate. We find that households with individuals who have exposure to a language with a high degree of gender marking are significantly more likely to allocate household tasks on the basis of sex, and to do so more intensively. These patterns could result from language serving as a cultural marker or from language having a direct effect on behavior. We provide multiple pieces of suggestive evidence consistent with language affecting cognition, but future analysis may be able to more precisely examine whether a causal relationship exists between language and behavior and if so, in which direction. Regardless of causality, the associations we document reveal that grammatical features of language could be of use in other settings, for example as proxies or instrumental variables for gender roles in society.

Furthermore, if languages do exert a causal influence on behavior, then there are a range of potential implications. For instance, language-inspired gender roles could influence relative bargaining power within the household, by reducing women's incentives to invest in education or accumulate work experience, limiting labor market prospects outside the home. Similarly, strong gender-based task specialization in the household would imply that men and women speaking gendered languages could be stronger complements for one another in the household -- and thus more likely to pair up in the marriage market. This behavior might influence household risk sharing or marriage dynamics and could have the potential to reduce the rate of immigrant assimilation.

With regards to the literature on the economics of identity, this paper makes two clear contributions. First, we show that skewed gender norms are only visible for individuals who migrate after childhood, suggesting that early-life experiences – including possibly the exposure to language during formative periods of the life cycle - are instrumental in the development of gender roles. Second, these norms persist regardless of a migrant's duration of residence in the U.S., suggesting that once established, acquired gender identities become ingrained, regardless of subsequent cultural influences exerted by the external environment. Our

findings suggest that as cultural traits, gender identities are malleable early in life, but once established, have both strong and persistent effects on individual behavior in the household.

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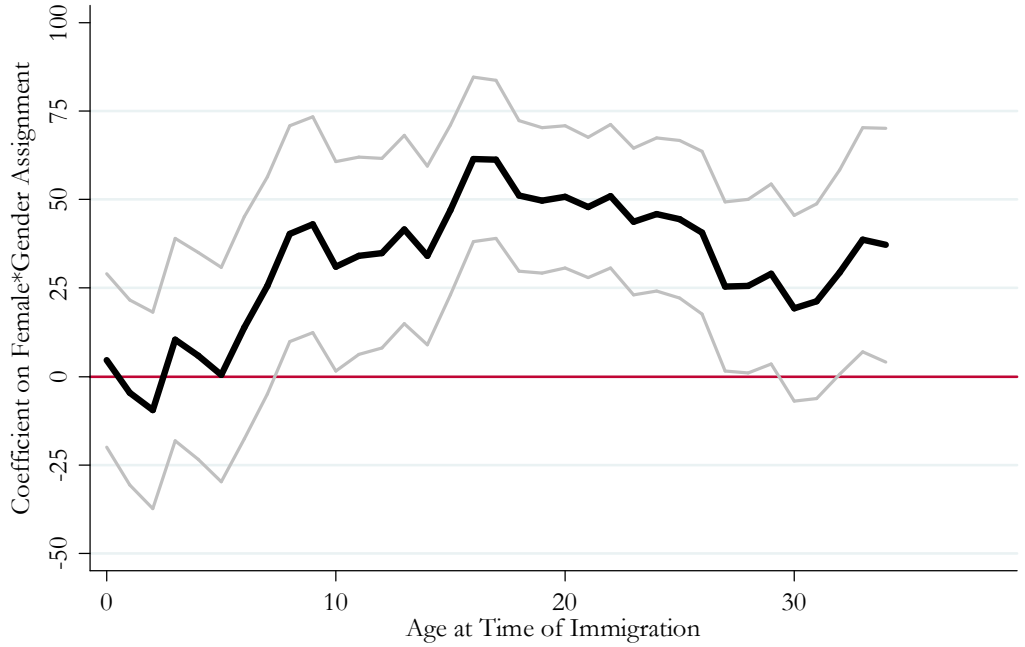
Figure 1: Gender Bias in Housework by Age of Migration



Confidence interval is 10%. Time window is 6 years. Regression includes all controls from Table 4, Column 5.

Figure 2: Housework by Gender, Gender Assignment (GA), and Age of Migration

Regression Adjusted Means with Confidence Intervals

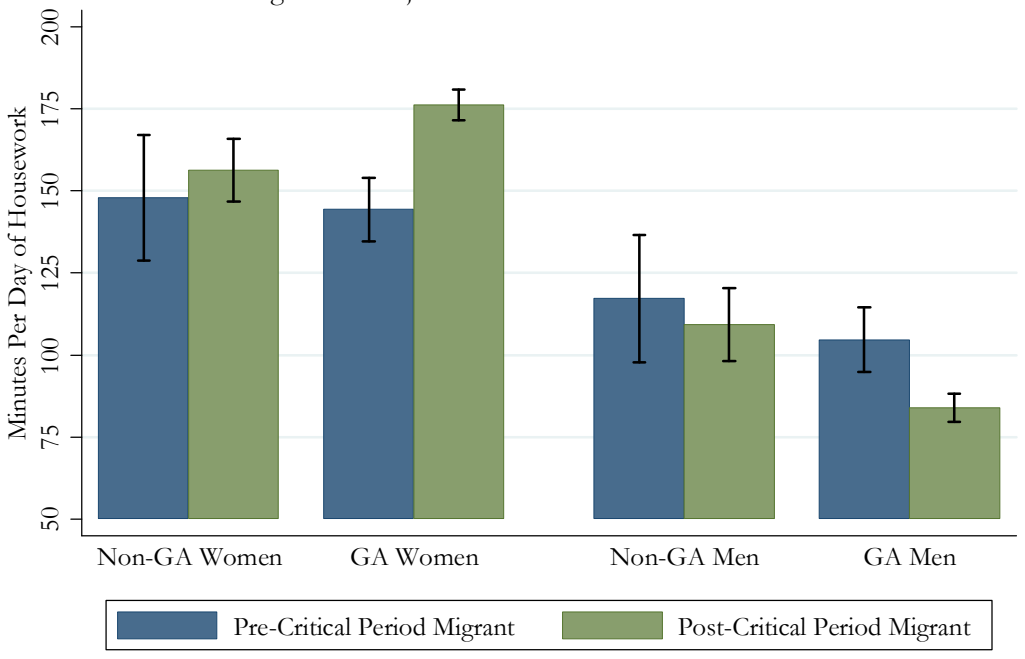
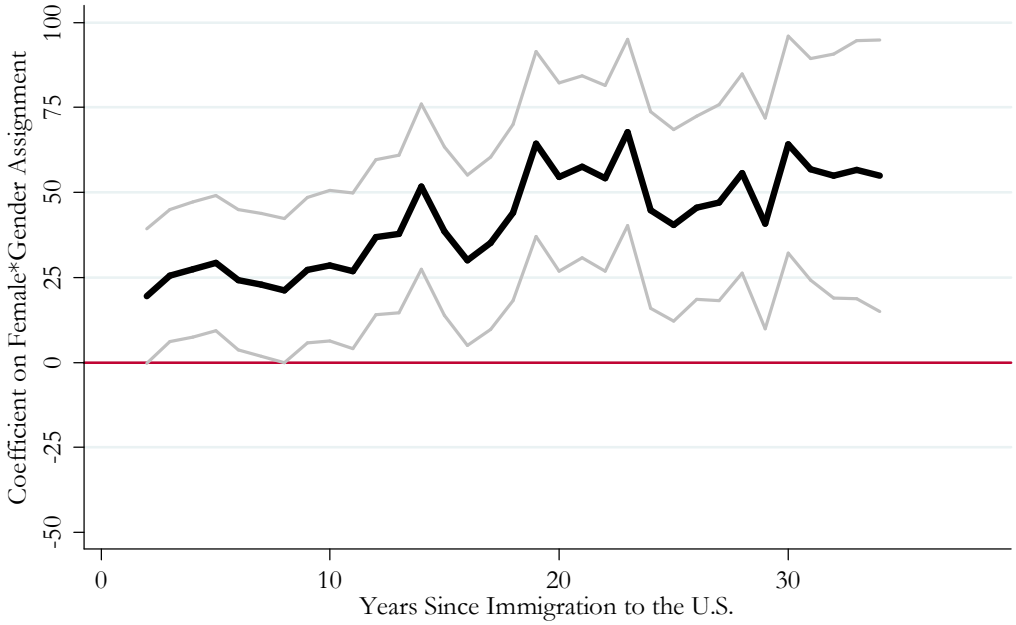


Figure 3: Gender Bias in Housework by Time Since Immigration



Confidence interval is 10%. Time window is 6 years. Regression includes all controls from Table 4, Column 5 and a control for age at immigration.

Table 1: Summary Statistics

Primary Sample: 1st Generation Immigrants	Mean
Respondent Demographics	
Gender	0.54
Age	44.10
	(16.06)
Spouse or Partner Present	0.67
Educational Attainment	
Less than HS	0.29
High School	0.23
Some College/Assoc. Degree	0.18
Bachelors Degree	0.18
Graduate or Prof. Degree	0.12
Current Student	0.10
Race/Ethnicity	
Black	0.07
White	0.70
Other	0.23
Hispanic	0.47
Respondent Labor Market Characteristics	
Employed	0.65
Unemployed	0.06
Not in Labor Force	0.30
Hours Worked	39.74
	(12.42)
Weekly Earnings	682.41
	(640.30)
Paid Hourly	0.54
Government Employee	0.11
Self-Employed	0.10
Household Demographics	
Household Size	3.59
	(1.78)
Number of Children	1.09
	(1.27)

Note: Results calculated using the ATUS-CPS sample of 1st generation immigrants from 2003-2012. Estimates are survey weighted. Standard deviations in parentheses are included where informative. Total number of observations is 19,458. Usual hours worked is calculated by summing across multiple jobs, and excludes individuals reporting variable work weeks. Hours worked, weekly earnings, and indicators for paid hourly, government employment, and self-employment are calculated among the subset of employed individuals only.

Table 2: Time Use Statistics

	1st Generation Immigrants			
	Males		Females	
	Mean	% > 0	Mean	% > 0
Minutes Per Day of:	(1)	(2)	(3)	(4)
Housework	81.04	0.61	170.90	0.87
Cleaning, laundry, sewing	18.10	0.20	74.04	0.56
Food prep and cleanup	19.23	0.35	70.88	0.74
Repair and maintenance	17.43	0.15	6.15	0.11
Lawn, garden, plant care	14.35	0.12	6.78	0.08
Animal and pet care	2.65	0.06	3.30	0.08
Household management	9.20	0.18	9.68	0.20
Caregiving	27.94	0.30	50.25	0.42
Care for children	22.51	0.22	45.33	0.36
Care for the elderly	5.42	0.11	4.92	0.10
Shopping	39.79	0.36	47.98	0.41
Educational Activities	19.56	0.06	20.85	0.07
Leisure Time	327.69	0.96	286.44	0.95
Work Time	244.02	0.49	146.56	0.32
Sample Size	8684		10774	

Note: Results calculated using the ATUS-CPS sample of 1st generation immigrants from 2003-2012. Means in columns (1) and (3) are calculated including individuals with zero time. Percentage of individuals reporting non-zero time allocation to a particular activity reported in columns (2) and (4). Estimates are survey weighted. Total number of observations is 19,458. Appendix Table B1 details the time use codes aggregated into each category.

Table 3: Gender Marking Statistics

Panel A: Dominant Language

Variable	Obs	Mean	Min	Max
GA	15510	0.81	0	1
GP	16195	0.65	0	1
NG	15510	0.79	0	1
SB	15510	0.92	0	1
GII	15242	3.22	0	4
		(0.28)		

Panel B: ACS Language Estimates

Variable	Obs	Mean	Min	Max
GA	18522	0.60	0.00	0.96
GP	18522	0.53	0.00	0.96
NG	18522	0.61	0.00	0.96
SB	18522	0.85	0.08	1.00
GAv1	16600	0.67	0	1
GAv2	15169	0.69	0	1
GAv3	15698	0.69	0	1

Panel C: Correlations

		Dominant Language Strategy				ACS Strategy			
	Variable	GA	GP	NG	SB	GA	GP	NG	SB
Dom Lang	GA	1.00							
Dom Lang	GP	0.72	1.00						
Dom Lang	NG	0.79	0.84	1.00					
Dom Lang	SB	0.58	0.47	0.56	1.00				
ACS	GA	0.86	0.76	0.79	0.58	1.00			
ACS	GP	0.68	0.90	0.80	0.46	0.85	1.00		
ACS	NG	0.73	0.84	0.92	0.55	0.88	0.92	1.00	
ACS	SB	0.53	0.40	0.45	0.88	0.61	0.49	0.56	1.00

Note: Panel A results calculated for the immigrant sample using ATUS-CPS sample from 2003-2012. Estimates are survey weighted. Standard deviations in parentheses are included where informative. Panel B results calculated from the 2007-2011 5 year ACS. Panel C correlations run at the country level. Individual level correlations produce similar results. Number of observations vary across gender-marking indicators because some languages cannot be assigned values.

Table 4: Housework, Gender, and Language in First Generation Immigrant Households

Dependent Variable: Time Spent on Housework (Mean: 132.71 minutes)						
	(1)	(2)	(3)	(4)	(5)	(6)
Gender Assignment	3.81		-23.48***	-28.49***	-23.49***	
	(5.85)		(7.70)	(8.08)	(7.66)	
Female		93.45***	52.57***	50.66***	43.93***	43.42***
		(10.80)	(7.79)	(7.20)	(7.17)	(7.62)
Female X Gender Assignment			52.91***	52.60***	39.45***	39.89***
			(11.39)	(11.35)	(8.84)	(9.31)
Age				4.04***	6.93***	7.04***
				(0.72)	(0.84)	(0.81)
Spouse or Partner Present				28.92***	24.90***	24.04***
				(2.90)	(3.47)	(3.44)
Household Size				-1.09	-0.20	-0.44
				(1.28)	(1.29)	(1.23)
Number of children < 18				5.64***	2.83**	2.77*
				(1.46)	(1.40)	(1.42)
Student				-19.42***	-32.61***	-30.54***
				(3.08)	(3.15)	(3.54)
Employed					-45.81***	-44.51***
					(9.80)	(9.95)
Hours Worked					-0.90***	-0.94***
					(0.07)	(0.08)
Country Fixed Effects	No	No	No	No	No	Yes
R^2	0.00	0.10	0.10	0.15	0.18	0.19

Note: Coefficients should be interpreted as minutes per day. Results calculated using ATUS-CPS sample of 1st generation immigrants from 2003-2012. Estimates are survey weighted. Number of observations is 15,510. Columns (4) and (5) additionally include indicators for race and ethnicity, education level, survey year, and a control for age squared. Column (5) additionally includes weekly earnings and indicator for labor force status, paid by the hour, government and self-employment. Standard errors are clustered at the country level in Columns (1)-(5). Column (6) presents Huber-White robust standard errors. All columns include survey year controls. *** p<0.01, ** p<0.05, * p<0.1

Table 5: Gender Differences in the Time Use of Immigrants by Activity

Coefficient on:	GA		Female		Female*GA	
	Coef	SE	Coef	SE	Coef	SE
Total Housework	-22.57***	(7.29)	43.07***	(7.22)	40.72***	(8.86)
Cooking and cleaning	-14.21**	(6.68)	65.97***	(5.98)	39.29***	(9.15)
Food prep and cleanup	-4.18	(3.67)	35.31***	(5.14)	19.65***	(6.89)
Cleaning, laundry, sewing	-10.03***	(3.38)	30.66***	(4.50)	19.64***	(5.88)
Repair and maintenance tasks	-0.81	(3.89)	-12.66***	(2.72)	-0.64	(2.97)
Interior maintenance	0.17	(1.83)	-3.07**	(1.38)	0.74	(1.48)
Exterior maintenance	-1.96	(1.89)	-5.89***	(1.97)	1.50	(1.95)
Vehicle maintenance	0.51	(1.32)	-3.09***	(1.00)	-1.52	(1.41)
Appliance and toy repair	0.67	(0.70)	-0.37	(0.48)	-1.45**	(0.71)
Lawn, garden, plant care	-7.04**	(3.22)	-12.20***	(2.67)	4.18	(2.85)
Animal and pet care	-0.16	(1.06)	0.81	(0.73)	-0.52	(0.98)
Household management	-0.39	(1.96)	1.07	(1.51)	-1.48	(1.62)
Other housework	0.05	(0.03)	0.08	(0.06)	-0.11	(0.07)
Shopping	1.39	(2.75)	8.36**	(3.92)	-2.02	(4.33)
Educational Activities	-9.92**	(4.13)	-3.53	(3.97)	2.17	(3.93)
Leisure Time	16.67**	(6.65)	-53.19***	(4.60)	-27.45***	(9.42)
Caregiving	-3.52	(2.64)	12.36***	(3.24)	2.44	(3.33)
Care for children	1.69	(1.21)	-0.61	(0.97)	-1.15	(1.14)
Care for the elderly	-5.21**	(2.44)	12.97***	(2.95)	3.59	(3.18)

Note: Coefficients should be interpreted as minutes per day. Results calculated using ATUS-CPS sample of 1st generation immigrants from 2003-2012. Estimates are survey weighted. Number of observations is 15,510. All regressions include the full set of controls from Table 4, column (5). Standard errors are clustered at the country level. *** p<0.01, ** p<0.05, * p<0.1

Table 6: Alternative Measures of Grammatical Gender Marking and Language Spoken

Dependent Variable: Time Spent on Housework

Panel A: Dominant Language	GA	GP	NG	SB	GII	GA conditional on SB=0	GA conditional on SB=1
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Gender Assignment	-23.49***	-34.29***	-20.83***	-17.52**	-7.74***	9.68	-25.95**
	(7.66)	(7.84)	(6.89)	(8.54)	(2.22)	(7.62)	(10.08)
Female	43.93***	57.57***	49.25***	43.73***	39.34***	43.95***	44.43***
	(7.17)	(6.71)	(6.09)	(10.55)	(9.67)	(10.38)	(10.12)
Female X Gender Marking	39.45***	27.64***	32.98***	33.99***	11.44***	12.08	39.46***
	(8.84)	(8.62)	(8.92)	(12.88)	(2.95)	(10.56)	(11.05)
Panel B: ACS Estimates	GA	GP	NG	SB	GAv1	GAv2	GAv3
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Gender Assignment	-19.28**	-19.84**	-16.06*	-5.05	-27.09***	-26.08***	-27.90***
	(8.57)	(9.13)	(8.88)	(10.24)	(6.79)	(7.57)	(7.02)
Female	55.05***	59.50***	54.72***	54.02***	50.34***	48.31***	48.71***
	(5.88)	(5.52)	(4.88)	(8.84)	(5.04)	(5.45)	(5.41)
Female X Gender Assignment	32.74***	28.18***	31.96***	22.78*	33.61***	35.55***	36.65***
	(8.98)	(8.45)	(8.50)	(13.01)	(7.97)	(8.50)	(7.91)

Note: Coefficients should be interpreted as minutes per day. Results calculated using ATUS-CPS sample of 1st generation immigrants from 2003-2012. Number of observations in Panel A varies by specification, and ranges from 15,510 to 16,195. Number of observations in Panel B is 18,503 for columns (1)-(4), and ranges from 15,169 to 16,600 for (5)-(7). Estimates are survey weighted. All regressions include the full set of controls from Table 4, column (5). Standard errors are clustered at the country level. *** p<0.01, ** p<0.05, * p<0.1

Table 7: Household Structure, Labor Force, and Specification Checks

Dependent Variable: Time Spent on Housework

Panel A: Household and Labor Force Sub-Samples	Spouse Present	Spouse or Partner Present	Single	Both Partners Work
	(1)	(2)	(3)	(4)
Gender Assignment	-24.47**	-24.68***	-21.35***	-18.30*
	(9.51)	(9.50)	(7.88)	(11.01)
Female	60.37***	60.31***	7.22	50.57***
	(7.90)	(7.72)	(11.02)	(11.56)
Female X Gender Assignment	35.20***	35.23***	48.94***	29.71**
	(10.30)	(9.93)	(11.64)	(13.72)
Number of Observations	9,422	9,787	5,723	4,126
Mean of Dependent Variable	147.33	137.68	104.56	136.02

Panel B: Alternative Specifications	Controlling for Origin FLFP	Controlling for Origin GDP	Non-Zero Time Respondents	Tobit
	(6)	(7)	(7)	(8)
Gender Assignment	-20.36**	-22.05***	-10.04	-9.92
	(8.99)	(7.70)	(10.65)	(10.48)
Female	43.63***	43.52***	28.06***	28.06***
	(7.21)	(7.22)	(10.57)	(10.43)
Female X Gender Assignment	39.58***	39.78***	23.88**	24.01**
	(8.91)	(8.88)	(11.09)	(10.97)
Number of Observations	15,505	15,459	11,869	11,869
Mean of Dependent Variable	133.211	132.995	171.93	129.63

Note: Coefficients should be interpreted as minutes per day. Results calculated using the ATUS-CPS sample of 1st generation immigrants from 2003-2012. Estimates are survey weighted. All regressions include the full set of controls from Table 4, column (5). Standard errors are clustered at the country level. *** p<0.01, ** p<0.05, * p<0.1

Table 8: Critical Period Differences in Differences Estimates

Dependent Variable: Time Spent on Housework		
	(1)	(2)
Gender Assignment	-12.54	
	(13.97)	
Female	30.64***	30.91**
	(11.82)	(13.87)
Post Critical Period	-8.00	-7.36
	(11.62)	(11.37)
Female X Gender Assignment	9.03	8.37
	(13.19)	(15.31)
Post Critical Period X Female	16.41	15.52
	(12.03)	(15.60)
Post Critical Period X Gender Assignment	-12.80	-11.50
	(12.22)	(12.41)
Female X Gender Assignment X Post Critical Period	36.26***	37.45**
	(13.97)	(17.15)
Country of Origin Fixed Effects	No	Yes
Number of Observations	15,510	15,510
R^2	0.18	0.19
Mean of Dependent Variable	129.64	129.64

Note: Post critical period is defined to be age 10 or greater at time of arrival to the U.S. Coefficients should be interpreted as minutes per day. Results calculated using the ATUS-CPS sample of 1st generation immigrants from 2003-2012. Estimates are survey weighted. Number of observations varies by specification. All regressions include the full set of controls from Table 4, Column (5). Columns (1) and (2) present standard errors clustered at the country level. Columns (3) and (4) present Huber-White robust standard errors. *** p<0.01, ** p<0.05, * p<0.1

Table A1: Sample Summary Statistics

	Full U.S.	Immigrants	Difference:
	(1)	(2)	(4)
Respondent Demographics			
Gender	0.54	0.54	0.001
Age	47.20	44.10	-3.590***
	(18.08)	(16.06)	
Spouse or Partner Present	0.61	0.67	0.068***
Educational Attainment			
Less than HS	0.16	0.29	0.146***
High School	0.27	0.23	-0.054***
Some College/Assoc. Degree	0.27	0.18	-0.095***
Bachelors Degree	0.19	0.18	-0.013***
Graduate or Prof. Degree	0.11	0.12	0.017***
Current Student	0.11	0.10	-0.014***
Race/Ethnicity			
Black	0.09	0.07	-0.014***
White	0.86	0.70	0.017***
Other	0.06	0.23	0.197***
Hispanic	0.11	0.47	0.416***
Respondent Labor Market Characteristics			
Employed	0.62	0.65	0.027***
Unemployed	0.05	0.06	0.006***
Not in Labor Force	0.33	0.30	-0.033***
Hours Worked	39.92	39.74	-0.208
	(13.87)	(12.42)	
Weekly Earnings	721.81	682.41	-45.929***
	(651.53)	(640.30)	
Paid Hourly	0.50	0.54	0.042***
Government Employee	0.16	0.11	-0.068***
Self-Employed	0.12	0.10	-0.018***
Household Demographics			
Household Size	2.94	3.59	0.751***
	(1.53)	(1.78)	
Number of Children	0.75	1.09	0.397***
	(1.12)	(1.27)	

Note: Results calculated using the ATUS-CPS sample from 2003-2012. Estimates are survey weighted. Standard deviations in parentheses are included where informative. Total number of observations is 136,960 for the full sample and 19,458 for first generation immigrants. Usual hours worked calculated summed across multiple jobs and excludes individuals reporting variable work weeks. Hours worked, weekly earnings, and indicators for paid hourly, government employment, and self-employment are calculated among the subset of employed individuals only. *** p<0.01, ** p<0.05, * p<0.1

Table A2: Time Use Statistics for the Full ATUS

	All U.S. Sample			
	Males		Females	
	Mean	% > 0	Mean	% > 0
Housework	96.18	0.69	148.47	0.86
Cleaning, laundry, sewing	17.02	0.21	59.85	0.54
Food prep and cleanup	18.43	0.39	47.75	0.67
Repair and maintenance	24.44	0.21	9.97	0.15
Lawn, garden, plant care	19.55	0.14	9.46	0.09
Animal and pet care	5.16	0.13	6.32	0.16
Household management	11.34	0.23	15.01	0.30
Caregiving	26.11	0.29	43.36	0.39
Care for children	18.65	0.19	36.03	0.29
Care for the elderly	7.47	0.13	7.33	0.14
Shopping	35.15	0.38	47.75	0.45
Educational Activities	19.91	0.06	19.92	0.07
Leisure Time	370.54	0.97	325.56	0.97
Work Time	208.60	0.44	141.15	0.33
Sample Size	59683		77277	

Note: Results calculated using the ATUS-CPS sample from 2003-2012. Means are calculated including individuals with zero time. Percentage of individuals reporting non-zero time allocation to a particular activity reported in parenthesis. Estimates are survey weighted. Total number of observations is 136,960 for the full ATUS. Appendix Table B1 details the time use codes aggregated into each category.

Table A3: Gender Differences in the Probability of Undertaking an Activity

Coefficient on:	GA		Female		Female*GA	
	Coef	SE	Coef	SE	Coef	SE
Total Housework	-0.11***	(0.02)	0.13***	(0.01)	0.14***	(0.02)
Cooking and cleaning	-0.12***	(0.02)	0.23***	(0.02)	0.18***	(0.03)
Food prep and cleanup	-0.03*	(0.02)	0.27***	(0.02)	0.07**	(0.03)
Cleaning, laundry, sewing	-0.12***	(0.03)	0.21***	(0.02)	0.20***	(0.04)
Repair and maintenance tasks	0.00	(0.03)	-0.02	(0.02)	-0.04**	(0.02)
Interior maintenance	-0.01	(0.01)	-0.02**	(0.01)	0.01	(0.01)
Exterior maintenance	-0.00	(0.01)	-0.02***	(0.01)	0.00	(0.01)
Vehicle maintenance	0.01	(0.01)	-0.03***	(0.01)	-0.02	(0.01)
Appliance and toy repair	-0.01	(0.01)	-0.01*	(0.00)	-0.00	(0.00)
Lawn, garden, plant care	-0.04*	(0.02)	-0.06***	(0.02)	0.01	(0.02)
Animal and pet care	-0.01	(0.02)	0.03***	(0.01)	-0.01	(0.02)
Household management	-0.02	(0.02)	0.06***	(0.02)	-0.04**	(0.02)
Other housework	0.00	(0.00)	0.00	(0.00)	-0.00	(0.00)
Shopping	0.01	(0.02)	0.07**	(0.03)	-0.03	(0.03)
Educational Activities	-0.01*	(0.01)	0.01	(0.01)	-0.01	(0.01)
Leisure Time	-0.01	(0.01)	-0.02**	(0.01)	0.01	(0.01)
Caregiving	-0.02	(0.02)	0.08***	(0.01)	0.04	(0.03)
Care for children	0.01	(0.02)	0.00	(0.02)	-0.02	(0.02)
Care for the elderly	-0.03**	(0.02)	0.07***	(0.01)	0.05**	(0.02)

Note: Dependent variable is an indicator for positive time spent on an activity. Probit results calculated using the ATUS-CPS sample of 1st generation immigrants from 2003-2012. Estimates are survey weighted. Number of observations is 15,510. All regressions include the full set of controls from Table 4, column (5). Standard errors are clustered at the country level. *** p<0.01, ** p<0.05, * p<0.1

Table A4: Sample Selection Checks

Dependent Variable: Time Spent on Housework				
	Excluding Mexico	Excluding Mexico and Puerto Rico	Excluding Spanish Speaking	Excluding English Speaking Migrants
	(2)	(3)	(4)	(5)
Gender Assignment	-19.73**	-20.09**	-21.64**	-28.24***
	(7.92)	(8.02)	(9.11)	(7.95)
Female	43.88***	43.26***	42.13***	39.80***
	(7.32)	(7.32)	(7.62)	(8.33)
Female X Gender Assignment	31.86***	33.43***	38.07***	43.69***
	(8.73)	(8.86)	(10.57)	(10.08)
Number of Observations	9,961	9,164	5,486	14,465
Mean of Dependent Variable	128.92	128.88	128.52	132.157

Note: Coefficients should be interpreted as minutes per day. Results calculated using the ATUS-CPS sample of 1st generation immigrants from 2003-2012. Estimates are survey weighted. All regressions include the full set of controls from Table 4, column (5). Standard errors are clustered at the country level. *** p<0.01, ** p<0.05, * p<0.1

Table B1: Time Use Categorizations

	Category	ATUS Codes
1	Food prep and cleanup	t020201 + t020202 + t020203 + t020299
2	Cleaning, laundry, sewing	t020101 + t020102 + t020103 + t020104 + t020199 + t029999
3	Interior Maintenance	t020301 + t020302 + t020303 + t020399
4	Exterior Maintenance	t020401 + t020402 + t020499
5	Vehicle Maintenance	t020701 + t020799
6	Appliance and toy repair	t020801 + t020899
8	Lawn, garden, animal care	t020501 + t020502 + t020599
9	Animal and pet care	t020681 + t020699
10	Household management	t020901 + t020902 + t020903 + t020904 + t020905 + t020999
11	Other housework	t029999
	Repair and maintenance	Categories 3 -6
	Total Housework Time	Categories 1 - 11
12	Care for children	t030101 + t030102 + t030103 + t030104 + t030105 + t030186 + t030108 + t030109 + t030110 + t030111 + t030112 + t030199 + t030201 + t030202 + t030203 + t030204 + t030299 + t030301 + t030302 + t030303 + t030399 + t040101 + t040102 + t040103 + t040104 + t040105 + t040186 + t040108 + t040109 + t040110 + t040111 + t040112 + t040199
13	Care for the elderly	t030401 + t030402 + t030403 + t030404 + t030405 + t030499 + t030501 + t030502 + t030503 + t030504 + t030599 + t039999 + t040401 + t040402 + t040403 + t040404 + t040405 + t040499 + t040501 + t040502 + t040503 + t040504 + t040505 + t040506 + t040507 + t040508 + t040599 + t049999
	Caregiving	Categories 12 -13
	Shoppping	t070101 + t070102 + t070103 + t070104 + t070105 + t060199 + t070201 + t070299 + t070301 + t070399 + t079999 + t180701 + t180782
	Educational Activities	t060101 + t060102 + t060103 + t060104 + t060199 + t060201 + t060202 + t060203 + t060289 + t060301 + t060302 + t060303 + t060399 + t060401 + t060402 + t060403 + t060499 + t069999 + t180601 + t180682 + t180699
	Leisure Time	t120101 + t120199 + t120201 + t120202 + t120299 + t120301 + t120302 + t120303 + t120304 + t120305 + t120306 + t120307 + t120308 + t120309 + t120310 + t120311 + t120312 + t120313 + t120399 + t120401 + t120402 + t120403 + t120404 + t120405 + t120499 + t120501 + t120502 + t120503 + t120504 + t120599 + t129999 + t181201 + t181202 + t181283 + t181204 + t181299 + t130101 + t130102 + t130103 + t130104 + t130105 + t130106 + t130107 + t130108 + t130109 + t130110 + t130111 + t130112 + t130113 + t130114 + t130115 + t130116 + t130117 + t130118 + t130119 + t130120 + t130121 + t130122 + t130123 + t130124 + t130125 + t130126 + t130127 + t130128 + t130129 + t130130 + t130131 + t130132 + t130133 + t130134 + t130135 + t130136 + t130199 + t130201 + t130202 + t130203 + t130204 + t130205 + t130206 + t130207 + t130208 + t130209 + t130210 + t130211 + t130212 + t130213 + t130214 + t130215 + t130216 + t130217 + t130218 + t130219 + t130220 + t130221 + t130222 + t130223 + t130224 + t130225 + t130226 + t130227 + t130228 + t130229 + t130230 + t130231 + t130232 + t130299 + t181301 + t181302 + t181399 + t130301 + t130302 + t130399 + t130401 + t130402 + t130499 + t139999 + t140101 + t140102 + t140103 + t140104 + t140105 + t149999 + t181401 + t181499 + t181601 + t181699
	Work Time	t0501 + t0502 + t0503 + t0504 + t0599 + t180501 + t180502 + t180589

Table C1: Immigrant Sample by Linguistic Gender Assignment

No Gender Assignment			*Gender Assignment*		
Country of Origin	Frequency	Percent	Country of Origin	Frequency	Percent
Armenia	24	0.83	Afghanistan	21	0.17
Australia	34	1.17	Algeria	2	0.02
Belize	26	0.90	Argentina	102	0.81
Bermuda	5	0.17	Austria	22	0.17
Cambodia	46	1.58	Bolivia	36	0.29
Canada	485	16.70	Chile	52	0.41
China	460	15.83	Colombia	400	3.17
England	305	10.50	Costa Rica	45	0.36
Finland	13	0.45	Cuba	642	5.09
Georgia	1	0.03	Dominican Republic	434	3.44
Hong Kong	63	2.17	Ecuador	197	1.56
Hungary	52	1.79	Egypt	68	0.54
Iran	133	4.58	El Salvador	544	4.32
Ireland	51	1.76	Ethiopia	74	0.59
Myanmar	15	0.52	Fiji	20	0.16
New Zealand	14	0.48	France	110	0.87
Northern Ireland	3	0.10	Germany	637	5.05
Philippines	627	21.58	Guatemala	303	2.40
Scotland	59	2.03	Honduras	201	1.59
Singapore	13	0.45	India	825	6.55
Thailand	84	2.89	Iraq	54	0.43
Turkey	49	1.69	Israel	49	0.39
United Kingdom	61	2.10	Jordan	33	0.26
Uzbekistan	2	0.07	Kuwait	13	0.10
Vietnam	278	9.57	Latvia	7	0.06
Wales	2	0.07	Lebanon	54	0.43
			Mexico	5,549	44.02
Total	2,905	100	Morocco	19	0.15
			Nicaragua	239	1.90
			Nigeria	100	0.79
			Pakistan	118	0.94
			Panama	72	0.57
			Paraguay	10	0.08
			Peru	221	1.75
			Puerto Rico	797	6.32
			Russia	145	1.15
			Saudi Arabia	11	0.09
			South Africa	45	0.36
			Spain	61	0.48
			Sudan, The	12	0.10
			Switzerland	28	0.22
			Syria	23	0.18
			USSR	23	0.18
			Ukraine	58	0.46
			Uruguay	33	0.26
			Venezuela	86	0.68
			Yemen	4	0.03
			Zimbabwe	6	0.05
			Total	12,605	100

Note: Based on the dominant language of migrant country of origin.

Table C2: Immigrant Sample by Linguistic Gendered Pronoun Usage

No Gender Specific Pronouns			*Gender Specific Pronouns*		
Country of Origin	Frequency	Percent	Country of Origin	Frequency	Percent
Albania	8	0.14	Algeria	2	0.02
Armenia	24	0.42	Argentina	102	0.97
Australia	34	0.59	Bolivia	36	0.34
Austria	22	0.38	Chile	52	0.50
Belgium	30	0.52	Colombia	400	3.82
Belize	26	0.45	Costa Rica	45	0.43
Bermuda	5	0.09	Cuba	642	6.13
Cambodia	46	0.80	Dominican Republic	434	4.15
Canada	485	8.47	Ecuador	197	1.88
China	460	8.03	Egypt	68	0.65
England	305	5.32	El Salvador	544	5.20
Ethiopia	74	1.29	Guatemala	303	2.90
Fiji	20	0.35	Honduras	201	1.92
Finland	13	0.23	Iraq	54	0.52
France	110	1.92	Israel	49	0.47
Georgia	1	0.02	Jordan	33	0.32
Germany	637	11.12	Kuwait	13	0.12
Hungary	52	0.91	Lebanon	54	0.52
India	825	14.40	Mexico	5,549	53.02
Iran	133	2.32	Morocco	19	0.18
Ireland	51	0.89	Nicaragua	239	2.28
Italy	185	3.23	Nigeria	100	0.96
Japan	207	3.61	Panama	72	0.69
Korea	137	2.39	Paraguay	10	0.10
Latvia	7	0.12	Peru	221	2.11
Myanmar	15	0.26	Puerto Rico	797	7.62
Netherlands	69	1.20	Saudi Arabia	11	0.11
New Zealand	14	0.24	Spain	61	0.58
Northern Ireland	3	0.05	Sudan, The	12	0.11
Philippines	627	10.94	Syria	23	0.22
Poland	158	2.76	Uruguay	33	0.32
Russia	145	2.53	Venezuela	86	0.82
Samoa	5	0.09	Yemen	4	0.04
Scotland	59	1.03			
Singapore	13	0.23	Total	10,466	100
South Africa	45	0.79			
South Korea	154	2.69			
Switzerland	28	0.49			
Thailand	84	1.47			
Turkey	49	0.86			
USSR	23	0.40			
United Kingdom	61	1.06			
Vietnam	278	4.85			
Wales	2	0.03			
Total	5,729	100			

Note: Based on the dominant language of migrant country of origin.

Table C3: Immigrant Sample by Linguistic Number of Genders

Language has no genders or three or more genders			*Language has only two genders*		
Country of Origin	Frequency	Percent	Country of Origin	Frequency	Percent
Armenia	24	0.74	Afghanistan	21	0.17
Australia	34	1.05	Algeria	2	0.02
Austria	22	0.68	Argentina	102	0.83
Belize	26	0.80	Bolivia	36	0.29
Bermuda	5	0.15	Chile	52	0.42
Cambodia	46	1.42	Colombia	400	3.26
Canada	485	14.96	Costa Rica	45	0.37
China	460	14.19	Cuba	642	5.23
England	305	9.41	Dominican Republic	434	3.54
Finland	13	0.40	Ecuador	197	1.61
Georgia	1	0.03	Egypt	68	0.55
Germany	637	19.65	El Salvador	544	4.43
Hong Kong	63	1.94	Ethiopia	74	0.60
Hungary	52	1.60	Fiji	20	0.16
Iran	133	4.10	France	110	0.90
Ireland	51	1.57	Guatemala	303	2.47
Myanmar	15	0.46	Honduras	201	1.64
New Zealand	14	0.43	India	825	6.72
Northern Ireland	3	0.09	Iraq	54	0.44
Russia	145	4.47	Israel	49	0.40
Scotland	59	1.82	Jordan	33	0.27
Singapore	13	0.40	Kuwait	13	0.11
South Africa	45	1.39	Latvia	7	0.06
Switzerland	28	0.86	Lebanon	54	0.44
Thailand	84	2.59	Mexico	5,549	45.23
Turkey	49	1.51	Morocco	19	0.15
USSR	23	0.71	Nicaragua	239	1.95
Ukraine	58	1.79	Nigeria	100	0.82
United Kingdom	61	1.88	Pakistan	118	0.96
Uzbekistan	2	0.06	Panama	72	0.59
Vietnam	278	8.57	Paraguay	10	0.08
Wales	2	0.06	Peru	221	1.80
Zimbabwe	6	0.19	Philippines	627	5.11
			Puerto Rico	797	6.50
Total	3,242	100	Saudi Arabia	11	0.09
			Spain	61	0.50
			Sudan, The	12	0.10
			Syria	23	0.19
			Uruguay	33	0.27
			Venezuela	86	0.70
			Yemen	4	0.03
			Total	12,268	100

Note: Based on the dominant language of migrant country of origin.

Table C4: Immigrant Sample by Sex Based Assignment

Not Sex Based

Country of Origin	Frequency	Percent	Country of Origin	Frequency	Percent
Armenia	24	1.87	Singapore	13	1.01
Cambodia	46	3.58	South Africa	45	3.5
China	460	35.83	Thailand	84	6.54
Finland	13	1.01	Turkey	49	3.82
Georgia	1	0.08	Uzbekistan	2	0.16
Hong Kong	63	4.91	Vietnam	278	21.65
Hungary	52	4.05	Zimbabwe	6	0.47
Iran	133	10.36			
Myanmar	15	1.17	Total	1,284	100

Sex Based

Country of Origin	Frequency	Percent	Country of Origin	Frequency	Percent
Afghanistan	21	0.15	Latvia	7	0.05
Algeria	2	0.01	Lebanon	54	0.38
Argentina	102	0.72	Mexico	5,549	39.01
Australia	34	0.24	Morocco	19	0.13
Austria	22	0.15	New Zealand	14	0.1
Belize	26	0.18	Nicaragua	239	1.68
Bermuda	5	0.04	Nigeria	100	0.7
Bolivia	36	0.25	Northern Ireland	3	0.02
Canada	485	3.41	Pakistan	118	0.83
Chile	52	0.37	Panama	72	0.51
Colombia	400	2.81	Paraguay	10	0.07
Costa Rica	45	0.32	Peru	221	1.55
Cuba	642	4.51	Philippines	627	4.41
Dominican Republic	434	3.05	Puerto Rico	797	5.6
Ecuador	197	1.38	Russia	145	1.02
Egypt	68	0.48	Saudi Arabia	11	0.08
El Salvador	544	3.82	Scotland	59	0.41
England	305	2.14	Spain	61	0.43
Ethiopia	74	0.52	Sudan, The	12	0.08
Fiji	20	0.14	Switzerland	28	0.2
France	110	0.77	Syria	23	0.16
Germany	637	4.48	USSR	23	0.16
Guatemala	303	2.13	Ukraine	58	0.41
Honduras	201	1.41	United Kingdom	61	0.43
India	825	5.8	Uruguay	33	0.23
Iraq	54	0.38	Venezuela	86	0.6
Ireland	51	0.36	Wales	2	0.01
Israel	49	0.34	Yemen	4	0.03
Jordan	33	0.23			
Kuwait	13	0.09	Total	14,226	100

Note: Based on the dominant language of migrant country of origin.

Table C5: Gender Marking in the Language Spoken at Home of the 2007-2011 ACS Migrant Sample, Page 1/3

Country or Region	ga1	ga0	gam	gp1	gp0	gpm	ng1	ng0	ngm	sb1	sb0	sbm	english
Afghanistan	0.22	0.75	0.03	0.01	0.79	0.21	0.21	0.76	0.02	0.32	0.66	0.02	0.09
Africa, not specified	0.39	0.43	0.17	0.12	0.78	0.11	0.34	0.50	0.16	0.65	0.19	0.16	0.31
Albania	0.04	0.09	0.87	0.01	0.99	0.00	0.01	0.99	0.00	1.00	0.00	0.00	0.09
Algeria	0.72	0.21	0.07	0.36	0.57	0.07	0.72	0.21	0.07	0.93	0.00	0.07	0.20
American Samoa	0.01	0.21	0.78	0.01	0.97	0.02	0.78	0.21	0.02	0.97	0.01	0.02	0.19
Americas, not specified	0.52	0.26	0.22	0.49	0.50	0.00	0.53	0.46	0.01	0.96	0.04	0.01	0.22
Antigua and Barbuda	0.03	0.95	0.02	0.03	0.97	0.00	0.03	0.95	0.02	0.98	0.01	0.02	0.94
Argentina	0.87	0.12	0.02	0.86	0.14	0.00	0.87	0.12	0.00	0.99	0.01	0.00	0.11
Armenia	0.07	0.92	0.00	0.01	0.99	0.00	0.01	0.99	0.00	0.12	0.88	0.00	0.04
Asia, not specified	0.73	0.25	0.02	0.70	0.29	0.01	0.73	0.25	0.01	0.91	0.08	0.01	0.16
Australia	0.06	0.90	0.04	0.02	0.97	0.02	0.05	0.94	0.01	0.95	0.03	0.01	0.87
Austria	0.44	0.51	0.05	0.02	0.96	0.02	0.04	0.94	0.02	0.96	0.02	0.02	0.49
Azerbaijan	0.67	0.25	0.08	0.01	0.91	0.08	0.01	0.91	0.08	0.72	0.20	0.08	0.04
Azores	0.01	0.19	0.79	0.01	0.99	0.00	0.80	0.19	0.00	1.00	0.00	0.00	0.19
Bahamas	0.03	0.83	0.14	0.01	0.98	0.00	0.03	0.83	0.14	0.86	0.00	0.14	0.83
Bangladesh	0.02	0.94	0.03	0.00	0.96	0.03	0.02	0.94	0.03	0.09	0.87	0.03	0.07
Barbados	0.02	0.97	0.01	0.01	0.99	0.00	0.02	0.97	0.01	0.99	0.00	0.01	0.97
Belarus	0.89	0.08	0.04	0.01	0.96	0.03	0.01	0.96	0.03	0.97	0.00	0.03	0.07
Belgium	0.32	0.49	0.19	0.03	0.94	0.02	0.31	0.67	0.02	0.97	0.01	0.02	0.48
Belize	0.24	0.64	0.12	0.23	0.73	0.04	0.24	0.64	0.12	0.88	0.00	0.12	0.64
Bermuda	0.03	0.94	0.03	0.02	0.97	0.01	0.05	0.94	0.01	0.99	0.00	0.01	0.94
Bolivia	0.87	0.12	0.01	0.86	0.13	0.00	0.87	0.13	0.00	0.99	0.01	0.00	0.12
Bosnia and Herzgovina	0.02	0.06	0.92	0.00	1.00	0.00	0.00	0.99	0.00	1.00	0.00	0.00	0.06
Brazil	0.07	0.12	0.81	0.06	0.94	0.00	0.87	0.13	0.00	0.99	0.01	0.00	0.11
Bulgaria	0.05	0.17	0.78	0.01	0.99	0.00	0.02	0.98	0.00	0.97	0.03	0.00	0.14
Cambodia	0.01	0.99	0.00	0.00	0.98	0.02	0.01	0.98	0.00	0.10	0.90	0.00	0.08
Cameroon	0.60	0.30	0.10	0.01	0.89	0.10	0.58	0.31	0.10	0.87	0.03	0.10	0.28
Canada	0.16	0.82	0.02	0.03	0.96	0.01	0.15	0.84	0.01	0.97	0.02	0.01	0.80
Cape Verde	0.04	0.09	0.87	0.03	0.97	0.00	0.70	0.09	0.21	0.79	0.00	0.21	0.08
Chile	0.86	0.14	0.00	0.85	0.15	0.00	0.86	0.14	0.00	1.00	0.00	0.00	0.13
China	0.01	0.98	0.01	0.00	0.85	0.15	0.01	0.98	0.01	0.10	0.88	0.01	0.09
Colombia	0.93	0.07	0.00	0.92	0.08	0.00	0.93	0.07	0.00	1.00	0.00	0.00	0.07
Costa Rica	0.88	0.12	0.00	0.88	0.12	0.00	0.88	0.12	0.00	1.00	0.00	0.00	0.12
Croatia	0.04	0.17	0.79	0.01	0.99	0.00	0.04	0.96	0.00	1.00	0.00	0.00	0.17
Cuba	0.94	0.06	0.00	0.94	0.06	0.00	0.94	0.06	0.00	1.00	0.00	0.00	0.05
Czech Republic	0.09	0.28	0.63	0.02	0.97	0.01	0.03	0.96	0.01	0.98	0.01	0.01	0.27
Czechoslovakia	0.13	0.47	0.40	0.03	0.91	0.06	0.04	0.90	0.06	0.89	0.05	0.06	0.42
Denmark	0.03	0.43	0.54	0.01	0.98	0.01	0.54	0.45	0.01	0.46	0.53	0.01	0.42
Dominica	0.54	0.36	0.10	0.49	0.50	0.00	0.54	0.36	0.10	0.90	0.00	0.10	0.36
Dominican Republic	0.96	0.04	0.00	0.96	0.04	0.00	0.96	0.04	0.00	1.00	0.00	0.00	0.04
Ecuador	0.95	0.05	0.00	0.95	0.05	0.00	0.95	0.05	0.00	1.00	0.00	0.00	0.05
Egypt	0.80	0.19	0.01	0.75	0.25	0.00	0.80	0.20	0.00	0.98	0.02	0.00	0.18
El Salvador	0.95	0.05	0.00	0.95	0.05	0.00	0.95	0.05	0.00	1.00	0.00	0.00	0.05
England	0.04	0.93	0.02	0.02	0.97	0.01	0.04	0.95	0.01	0.98	0.01	0.01	0.92
Eritrea	0.87	0.10	0.03	0.86	0.13	0.01	0.89	0.10	0.01	0.99	0.00	0.01	0.10
Ethiopia	0.85	0.14	0.02	0.73	0.26	0.01	0.84	0.15	0.01	0.98	0.01	0.01	0.13
Europe, not specified	0.22	0.44	0.34	0.07	0.90	0.04	0.14	0.82	0.04	0.94	0.03	0.04	0.42
Fiji	0.74	0.19	0.07	0.00	0.93	0.07	0.74	0.19	0.06	0.86	0.08	0.06	0.11
Finland	0.04	0.89	0.08	0.01	0.99	0.00	0.09	0.91	0.00	0.40	0.60	0.00	0.35
France	0.57	0.40	0.03	0.02	0.97	0.00	0.57	0.42	0.01	0.97	0.02	0.01	0.39
Georgia	0.42	0.24	0.34	0.00	0.65	0.34	0.00	0.65	0.34	0.52	0.14	0.34	0.10
Germany	0.33	0.65	0.02	0.02	0.98	0.00	0.03	0.97	0.00	0.99	0.01	0.00	0.64

Table C5: Gender Marking in the Language Spoken at Home of the 2007-2011 ACS Migrant Sample, Page 2/3

Country or Region	ga1	ga0	gam	gp1	gp0	gpm	ng1	ng0	ngm	sb1	sb0	sbm	english
Ghana	0.03	0.91	0.06	0.01	0.94	0.05	0.03	0.91	0.05	0.24	0.71	0.05	0.20
Greece	0.80	0.19	0.01	0.01	0.99	0.00	0.02	0.98	0.00	0.98	0.02	0.00	0.17
Grenada	0.01	0.97	0.01	0.01	0.99	0.00	0.01	0.97	0.01	0.98	0.00	0.01	0.97
Guam	0.03	0.96	0.01	0.02	0.97	0.01	0.07	0.93	0.01	0.82	0.18	0.01	0.75
Guatemala	0.91	0.08	0.01	0.91	0.08	0.01	0.91	0.08	0.01	0.99	0.00	0.01	0.08
Guyana	0.03	0.95	0.02	0.02	0.98	0.00	0.03	0.95	0.02	0.97	0.01	0.02	0.94
Haiti	0.11	0.09	0.80	0.01	0.99	0.00	0.11	0.09	0.80	0.20	0.00	0.80	0.09
Honduras	0.94	0.06	0.00	0.94	0.06	0.00	0.94	0.06	0.00	1.00	0.00	0.00	0.06
Hong Kong	0.01	0.99	0.00	0.00	0.61	0.38	0.01	0.99	0.00	0.15	0.85	0.00	0.14
Hungary	0.07	0.89	0.03	0.02	0.96	0.02	0.03	0.95	0.02	0.37	0.60	0.02	0.29
India	0.39	0.24	0.37	0.00	0.53	0.47	0.37	0.27	0.37	0.60	0.03	0.37	0.11
Indonesia	0.02	0.88	0.10	0.01	0.98	0.01	0.02	0.98	0.00	0.31	0.69	0.00	0.19
Iran	0.03	0.93	0.04	0.02	0.95	0.03	0.03	0.94	0.03	0.14	0.83	0.03	0.11
Iraq	0.52	0.14	0.34	0.52	0.19	0.29	0.52	0.14	0.34	0.61	0.05	0.34	0.08
Ireland	0.10	0.89	0.01	0.01	0.91	0.08	0.10	0.90	0.00	1.00	0.00	0.00	0.89
Israel	0.69	0.26	0.04	0.67	0.30	0.04	0.68	0.29	0.04	0.95	0.01	0.04	0.25
Italy	0.03	0.30	0.67	0.02	0.98	0.00	0.69	0.31	0.00	1.00	0.00	0.00	0.30
Jamaica	0.02	0.93	0.05	0.01	0.99	0.00	0.02	0.93	0.05	0.95	0.00	0.05	0.93
Japan	0.02	0.98	0.00	0.01	0.99	0.00	0.02	0.98	0.00	0.42	0.57	0.00	0.40
Jordan	0.83	0.16	0.01	0.83	0.17	0.00	0.83	0.17	0.00	0.98	0.02	0.00	0.15
Kenya	0.60	0.24	0.15	0.01	0.84	0.15	0.14	0.71	0.15	0.37	0.48	0.15	0.23
Korea	0.01	0.99	0.00	0.00	0.99	0.00	0.01	0.99	0.00	0.20	0.80	0.00	0.19
Kuwait	0.64	0.29	0.07	0.61	0.32	0.07	0.65	0.28	0.07	0.89	0.04	0.07	0.23
Laos	0.00	0.96	0.04	0.00	0.96	0.04	0.01	0.95	0.04	0.09	0.87	0.04	0.08
Latvia	0.73	0.26	0.02	0.01	0.99	0.00	0.36	0.64	0.00	1.00	0.00	0.00	0.25
Lebanon	0.68	0.31	0.01	0.63	0.36	0.01	0.68	0.31	0.01	0.84	0.15	0.01	0.16
Liberia	0.06	0.79	0.15	0.02	0.96	0.02	0.07	0.79	0.14	0.75	0.12	0.14	0.69
Lithuania	0.13	0.17	0.70	0.02	0.98	0.00	0.70	0.30	0.00	1.00	0.00	0.00	0.17
Macedonia	0.01	0.13	0.87	0.00	0.99	0.01	0.00	0.99	0.01	0.97	0.02	0.01	0.10
Malaysia	0.02	0.96	0.02	0.00	0.85	0.14	0.02	0.95	0.02	0.28	0.70	0.02	0.24
Mexico	0.96	0.04	0.00	0.96	0.04	0.00	0.96	0.04	0.00	1.00	0.00	0.00	0.04
Micronesia	0.00	0.96	0.04	0.00	0.99	0.01	0.03	0.96	0.01	0.19	0.80	0.01	0.15
Moldova	0.68	0.09	0.23	0.00	0.99	0.00	0.01	0.99	0.00	0.99	0.00	0.00	0.09
Morocco	0.74	0.24	0.02	0.49	0.50	0.01	0.74	0.25	0.01	0.99	0.00	0.01	0.24
Myanmar	0.02	0.82	0.17	0.00	0.81	0.19	0.02	0.82	0.16	0.10	0.73	0.16	0.08
Nepal	0.04	0.11	0.85	0.00	0.96	0.04	0.86	0.10	0.04	0.95	0.01	0.04	0.09
Netherlands	0.05	0.48	0.48	0.01	0.98	0.01	0.03	0.97	0.01	0.99	0.01	0.01	0.47
New Zealand	0.03	0.92	0.06	0.01	0.95	0.03	0.03	0.94	0.03	0.95	0.02	0.03	0.89
Nicaragua	0.94	0.05	0.00	0.94	0.06	0.00	0.94	0.05	0.00	1.00	0.00	0.00	0.05
Nigeria	0.03	0.93	0.05	0.01	0.95	0.04	0.02	0.93	0.04	0.31	0.65	0.04	0.28
Northern Ireland	0.03	0.95	0.02	0.01	0.96	0.03	0.02	0.96	0.02	0.98	0.00	0.02	0.94
Norway	0.02	0.47	0.51	0.01	0.99	0.00	0.02	0.97	0.00	0.99	0.01	0.00	0.47
Pakistan	0.10	0.13	0.77	0.01	0.21	0.78	0.10	0.13	0.76	0.20	0.03	0.76	0.10
Panama	0.64	0.35	0.01	0.64	0.36	0.01	0.64	0.35	0.00	0.99	0.01	0.00	0.34
Paraguay	0.76	0.22	0.02	0.72	0.27	0.02	0.72	0.27	0.02	0.96	0.02	0.02	0.20
Peru	0.93	0.07	0.00	0.93	0.07	0.00	0.93	0.07	0.00	1.00	0.00	0.00	0.07
Philippines	0.01	0.93	0.06	0.01	0.93	0.06	0.75	0.19	0.06	0.92	0.02	0.06	0.17
Poland	0.03	0.13	0.84	0.01	0.98	0.01	0.01	0.98	0.01	0.99	0.00	0.01	0.13
Portugal	0.03	0.14	0.82	0.03	0.97	0.00	0.85	0.14	0.00	1.00	0.00	0.00	0.14
Puerto Rico	0.89	0.11	0.00	0.89	0.11	0.00	0.89	0.11	0.00	1.00	0.00	0.00	0.11
Romania	0.07	0.24	0.69	0.02	0.96	0.01	0.04	0.95	0.01	0.94	0.05	0.01	0.19
Russia	0.77	0.22	0.01	0.01	0.99	0.01	0.01	0.98	0.01	0.98	0.01	0.01	0.20

Table C5: Gender Marking in the Language Spoken at Home of the 2007-2011 ACS Migrant Sample, Page 3/3

Country or Region	ga1	ga0	gam	gp1	gp0	gpm	ng1	ng0	ngm	sb1	sb0	sbm	english
Samoa	0.06	0.22	0.72	0.01	0.97	0.02	0.76	0.23	0.01	0.98	0.01	0.01	0.22
Saudi Arabia	0.64	0.29	0.07	0.61	0.31	0.07	0.66	0.27	0.07	0.91	0.02	0.07	0.24
Scotland	0.04	0.95	0.01	0.01	0.98	0.01	0.03	0.96	0.01	0.99	0.00	0.01	0.95
Senegal	0.85	0.12	0.04	0.02	0.97	0.01	0.62	0.36	0.02	0.73	0.24	0.02	0.11
Sierra Leone	0.17	0.26	0.56	0.03	0.78	0.19	0.07	0.37	0.56	0.32	0.12	0.56	0.25
Singapore	0.04	0.93	0.03	0.01	0.91	0.08	0.05	0.93	0.03	0.50	0.47	0.03	0.43
Slovakia	0.04	0.25	0.71	0.01	0.98	0.01	0.02	0.98	0.01	0.95	0.04	0.01	0.20
Somalia	0.90	0.09	0.01	0.02	0.97	0.01	0.88	0.11	0.01	0.97	0.03	0.01	0.08
South Africa	0.04	0.68	0.27	0.02	0.91	0.07	0.04	0.72	0.25	0.73	0.02	0.25	0.67
South America, not specified	0.42	0.55	0.03	0.41	0.58	0.01	0.43	0.57	0.01	0.98	0.01	0.01	0.54
South Korea	0.01	0.99	0.00	0.00	0.99	0.00	0.01	0.99	0.00	0.20	0.80	0.00	0.19
Spain	0.67	0.31	0.03	0.65	0.33	0.02	0.67	0.31	0.02	0.98	0.00	0.02	0.30
Sri Lanka	0.01	0.44	0.54	0.00	0.76	0.24	0.01	0.45	0.54	0.43	0.03	0.54	0.19
St. Kitts-Nevis	0.02	0.97	0.01	0.01	0.99	0.00	0.02	0.97	0.01	0.99	0.00	0.01	0.97
St. Lucia	0.07	0.61	0.31	0.01	0.98	0.01	0.07	0.62	0.31	0.69	0.00	0.31	0.61
St. Vincent & the Grenadines	0.01	0.97	0.01	0.01	0.99	0.00	0.01	0.97	0.01	0.99	0.00	0.01	0.97
Sudan	0.61	0.16	0.23	0.59	0.18	0.23	0.60	0.17	0.23	0.74	0.03	0.23	0.14
Sweden	0.03	0.37	0.60	0.02	0.98	0.01	0.61	0.39	0.01	0.40	0.59	0.01	0.36
Switzerland	0.55	0.40	0.05	0.03	0.96	0.01	0.21	0.78	0.01	0.98	0.02	0.01	0.38
Syria	0.65	0.30	0.04	0.63	0.33	0.04	0.65	0.32	0.04	0.77	0.19	0.04	0.11
Taiwan	0.00	0.84	0.15	0.00	0.84	0.16	0.01	0.84	0.15	0.11	0.74	0.15	0.10
Tanzania	0.42	0.25	0.34	0.01	0.66	0.33	0.05	0.62	0.33	0.28	0.39	0.33	0.23
Thailand	0.01	0.94	0.05	0.00	0.94	0.06	0.01	0.94	0.05	0.19	0.75	0.05	0.18
Tonga	0.00	0.16	0.84	0.00	0.17	0.83	0.02	0.15	0.83	0.16	0.01	0.83	0.14
Trinidad and Tobago	0.04	0.95	0.01	0.03	0.97	0.00	0.04	0.95	0.01	0.99	0.00	0.01	0.95
Turkey	0.05	0.93	0.02	0.02	0.97	0.01	0.03	0.95	0.02	0.27	0.71	0.02	0.22
U.S. Virgin Islands	0.15	0.83	0.02	0.14	0.86	0.00	0.15	0.84	0.02	0.98	0.00	0.02	0.83
USSR	0.88	0.10	0.02	0.02	0.97	0.01	0.03	0.96	0.01	0.97	0.02	0.01	0.08
Uganda	0.14	0.23	0.64	0.01	0.35	0.64	0.05	0.31	0.64	0.28	0.08	0.64	0.22
Ukraine	0.89	0.10	0.02	0.01	0.99	0.00	0.01	0.99	0.00	0.99	0.00	0.00	0.09
United Kingdom	0.07	0.90	0.04	0.02	0.95	0.03	0.06	0.92	0.03	0.96	0.02	0.03	0.88
Uruguay	0.92	0.06	0.02	0.92	0.08	0.00	0.93	0.06	0.00	0.99	0.00	0.00	0.06
Uzbekistan	0.70	0.16	0.14	0.01	0.86	0.13	0.01	0.86	0.13	0.78	0.09	0.13	0.07
Venezuela	0.88	0.10	0.02	0.88	0.12	0.00	0.90	0.10	0.00	0.99	0.01	0.00	0.09
Vietnam	0.00	0.99	0.00	0.00	0.96	0.04	0.01	0.99	0.00	0.08	0.91	0.00	0.08
Wales	0.07	0.90	0.04	0.02	0.95	0.03	0.06	0.92	0.03	0.96	0.02	0.03	0.88
West Indies, not specified	0.10	0.86	0.05	0.06	0.93	0.00	0.10	0.86	0.04	0.95	0.00	0.04	0.85
Yemen	0.91	0.09	0.01	0.89	0.10	0.00	0.91	0.09	0.00	0.99	0.00	0.00	0.08
Yugoslavia	0.08	0.18	0.74	0.01	0.99	0.00	0.02	0.98	0.00	0.98	0.02	0.00	0.16
Zimbabwe	0.03	0.46	0.51	0.01	0.51	0.47	0.03	0.47	0.50	0.49	0.01	0.50	0.45

Notes:

Data are survey weighted. Approximate sample size is 1.5 million individuals reporting birth outisde the U.S. Gender marking percentages are based on reported language spoken within the household.

Appendix D: The Critical Period Hypothesis

In the context of language, a "critical period" is generally defined as a period during which crucial experiences have a peak effect on learning. If an individual lacks exposure to a specific language during this time, exposure later in life may be expected to have weaker or even no effect at later ages. In his seminal study, Lenneberg (1967) argues that between years 3 through 10, one's language development particularly includes grammatical refinement and expansion of vocabulary. Subsequently, in the mid-teens acquisition of second language becomes increasingly difficult due to sharp declines in brain plasticity. In addition to documenting evidence on the critical period, subsequent research has focused on investigating what aspects of language acquisition and proficiency are most influenced by age of exposure.

Importantly, grammar has been shown to be one of the aspects of language for which age of exposure matters most. Indeed, the hypothesis that linguistic skills depend on the age of exposure to language has been widely studied, with grammatical processing being strongly influenced by the latter (Weber-Fox and Neville, 1996). As Newport (2006) summarizes, an extensive literature shows that proficiency over the control of the sound system and syntax and morphology is influenced by age. Similarly, Johnson and Newport (1989), who study Chinese and Korean immigrants to the U.S. who became exposed to English as second language at different ages, find that age of exposure greatly influences individual's ability to learn grammar, even when individuals have been exposed to English the same number of years. In the text, we choose age nine as a cut-off for consistency with Bleakley and Chin (2010), but as the literature argues, critical periods involve declines in learning over time. Our principal qualitative results are unchanged if we instead choose ages in a window of 2 years around our 9 year or less age cut-off.

An additional concern with the critical period analysis is that immigrants migrating to the U.S. from an English speaking country such as the United Kingdom or Australia would be included in the subset of non-gender marked migrants (using any measure of gender marking other than SB). Individuals arriving after the critical period from these countries would be likely to speak English fluently which means that the results in Table 8 column (1) could be attributable to the differential labor market opportunities available to English speaking migrants. To account for this, we compare immigrants from gender marked countries to those from the subset of countries with a non-gender marked language other than English. An advantage of this control group is that we can account for any effect of English fluency on household behavior because post-critical period migrants from both gender marked and non-gender marked countries are both unlikely to speak English in the home.

These results are presented in Appendix Table D1. Column (1) reproduces the coefficient on the triple interaction from Table 8, Column (1). Column (2) excludes all English speakers and conditions on gender assignment systems which are sex based (this is our preferred gender marking measure as the inclusions of non-sex based gender assigned languages essentially just adds noise to the coefficient estimate --

as similarly discussed for the baseline specification in the exercises of Columns (6) and (7) of Table 6). In this case, the result is both larger in magnitude and highly significant. Columns (3)-(5) repeat the main exercise, but exclude English and examine different critical period thresholds. Here the standard error increases and the results become significant only at the 90% level as in Columns (3) and (5) or at the 88% level in Column (4). The inclusion of fixed effects in the analysis produces a coefficient of similar magnitude but further increases the standard error for this check.

Table D1: Critical Period Robustness - Excluding English

	Dependent Variable: Time Spent on Housework					
	Full Sample	Excl. English & Gender Assignment is Sex Based	Excl. English & Critical Period is 9+	Excl. English & Critical Period is 10+	Excl. English & Critical Period is 11+	Excl. English & incl. Fixed Effects
	(1)	(2)	(3)	(4)	(5)	(6)
Female X Gender Assignment	36.26***	41.88***	31.10*	26.79	32.64*	27.80
X Post Critical Period	(13.97)	(7.33)	(16.36)	(16.82)	(16.79)	(21.11)
Country of Origin Fixed Effects	No	No	Yes	Yes	Yes	Yes
Number of Observations	15,510	13,181	14,465	14,465	14,465	14,465
R^2	0.184	0.192	0.188	0.189	0.189	0.194

Note: Post critical period is defined to be age 10 or greater at time of arrival to the U.S except in columns (3) and (5) as described in the column header. Coefficients should be interpreted as minutes per day. Results calculated using the ATUS-CPS sample of 1st generation immigrants from 2003-2012. Estimates are survey weighted. Number of observations varies by specification. All regressions include the full set of controls from Table 4, Column (5) and the full set of interaction components from Table 8. Columns present standard errors clustered at the country level, with the exception of column (6) which presents Huber-White robust standard errors. *** p<0.01, ** p<0.05, * p<0.1