



## **Supplementary Information for Multidimensional Measure of Immigrant Integration**

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## Supporting Information Text

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## 1. Survey Development

**A. Consulted Surveys.** After consulting the theoretical literature on integration, we explored existing studies and surveys that measure integration or aspects of integration. We looked for questions that could fulfill the seven criteria outlined in our paper. Table [S1](#) shows a list of all surveys and studies considered in this step.

**Table S1. List of surveys and studies consulted**

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Abrams, Ando and Hinke (1998) "Psychological Attachment to the Group: Cross-Cultural Differences in Organizational Identification and Subjective Norms as Predictors of Workers' Turnover Intentions" (1).

American Council on the Teaching of Foreign Languages, "NCSSFL-ACTFL Can-Do Statements: Progress Indicators for Language Learners" (2).

American National Election Studies (3).

Bagnall (2015) "Global Identity in Multicultural and International Educational Context" (4).

Beversluis, Schoeller-Diaz, Anderson, Anderson, Slaughter, Patel (2016) "Developing and Validating the Refugee Integration Scale in Nairobi, Kenya" (5).

Bergami and Bagozzi (2000) "Self-categorization, affective commitment and group self-esteem as distinct aspects of social identity in the organization" (6).

Brantmeier, Vanderplank, and Strube (2012) "What about me? Individual self-assessment by skill and level of language instruction" (7).

Brashears (2011) "Small networks and high isolation? A reexamination of American discussion networks" (8).

Brybaert (2013) "LexTALE\_FR a Fast, Free, and Efficient Test to Measure Language Proficiency in French" (9).

Caselli (2012) Measuring the Integration of Immigrants: Critical Notes from an Italian Experience (10).

Children of Immigrants Longitudinal Study (CILS) (11).

Delgado et al. (1999) "Self-Assessment of Linguistic Skills by Bilingual Hispanics" (12).

DIALANG Project (13).

Ethnic Diversity Survey (14).

European Quality of Life Surveys (EQLS) (15)

European Social Survey Round 8 (16).

European Union minorities and discrimination survey (17)

European Working Conditions Surveys (EWCS) (18).

Gaillard and Tremblay (2016) "Linguistic Proficiency Assessment in Second Language Acquisition Research: The Elicited Imitation Task" (19).

Gallup Poll (20).

General Social Survey (GSS) (21).

Hagerty and Patusky (1995) "Developing a measure of sense of belonging" (22).

Huddelston, Niessen, and Dag Tjaden (2013) "Using EU Indicators of Immigrant Integration" (23).

Immigrant Citizens Survey (ICS) (24)

International Social Survey Programme's (ISSP) National Identity Survey (25).

Kuo and Margalit (2012) "Measuring Individual Identity: Experimental Evidence" (26)

Latino National Survey (LNS) (27).

LeBlanc and Painchaud (1985) "Self-Assessment as a Second Language Placement Instrument" (28).

Lexical Test for Advanced Learners of English (LexTALE) (29).

Longitudinal Survey of Immigrants to Australia (LSIA) (30).

Longitudinal Survey of Immigrants to Canada (LSIC) (31).

Longitudinal Survey of the Integration of First-time Arrivals (ELIPA) (32).

Incorporating Data Quality Information in Mapping American Community Survey Data (33).

Mays and Cochran (2001) "Mental Health Correlates of Perceived Discrimination Among Lesbian, Gay, and Bisexual Adults in the United States" (34).

National Asian American Survey (NAAS) (35).

National Immigrant Survey (36).

National Survey of Midlife Development in the United States (37).

National UnDACAmented Research Project (38).

New Immigrant Survey (39).

New York City Department of Consumer Affairs Neighborhood Financial Services Study (40).

Pew Muslim American Survey (41).

Pew National Survey of Latinos (42).

Prentice and Miller (1994) "Asymmetries in Attachments to Groups and to their Members: Distinguishing between Common-Identity and Common-Bond Groups" (43).

Ross (1998) "Self-assessment in second language testing: a meta-analysis and analysis of experiential factors" (44).

Russell, Peplau, and Cutrona (1980) "The revised UCLA Loneliness Scale: concurrent and discriminant validity evidence." (45).

Science of Generosity Survey 2010 (46).

Six Country Immigrant Integration Comparative Survey (SCIICS) (47).

Social Capital Community Benchmark Survey (48).

Test of English as a Foreign Language (TOEFL) Exam (49).

UK Fourth National Survey of Ethnic Minorities (FNSEM) (50).

Wilson (1987) Urban Poverty and Family Life Survey of Chicago (51).

World Values Survey (WVS) (52).

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**B. Data collection.** To develop the final measure, we conducted eight surveys and a round of “think-aloud” face-to-face interviews. To validate the measure, we collected data through four additional surveys. Table S2 shows a list of all surveys; all surveys were approved by Stanford University’s Institutional Review Board (protocol ID: 35163). We obtained informed consent from every survey participant.

The data presented in this study was obtained through four different surveys, which we refer to as samples A - D. Our aim for sample A was to survey immigrants who, ex-ante, are very likely to show high levels of integration. For this, we asked the survey firm YouGov to provide an online sample of white immigrants with annual household incomes above the US median household income (living in the US, foreign born, white, income  $\geq$  \$50,000). Our focus on white immigrants with incomes above the US median for the sample was built on the assumption that their integration into the United States is less likely to be affected by discrimination than non-white immigrants and that they are less likely to face financial struggles than are those with incomes below the median.

Our aim for sample B was to get a mixed sample from outside the United States. To do this, we asked the survey firm Bilendi to provide an online panel of 250 first generation immigrants living in Germany (people born outside of Germany), 250 second generation Germans (people born in Germany with at least one immigrant parent), and 250 third and later generation Germans (people with two German-born parents). The data presented in the main text is only from first generation immigrants.

To survey immigrants expected to show lower levels of integration, we followed two approaches. For sample C, we used email addresses collected in another research project on the effects of naturalization (Stanford IRB protocol ID: 34554 (53)). This project offered a lottery for naturalization fee waivers and asked immigrants interested in participating to fill out a brief survey to test their eligibility for naturalization and the lottery. Most of the interested immigrants had incomes low enough to qualify for a federal fee waiver. These immigrants were not entered into the lottery and were not included in the research project. From the remaining interested immigrants, we selected the immigrants that took the registration survey in Spanish and sent them an email invitation to English and Spanish versions of our survey. As compensation for participating in our survey, the invitations—written in English and Spanish—offered a \$10 gift card. After a week of recruiting, we increased the gift card value to \$20.

Sample D was possible through a cooperation with the Alliance for Language Learners’ Integration, Education and Success (ALLIES), a coalition of adult schools, community colleges, and community-based organizations in the San Francisco Bay Area. Member organizations of ALLIES offer English classes to adults at various locations in the Bay Area. We visited these classrooms to field online and paper surveys, where we collected responses from 110 students. After consultations with ALLIES, the surveys were integrated into regular class hours and no incentives were offered.

For our analysis we use only complete cases. As several paper surveys from the ALLIES sample were unfinished, the sample size of this survey decreases to 53 respondents.

**Table S2. Overview of all surveys conducted**

| No.                              | Survey   | Place           | Mode                        | Time         | Language   | Interviews | Questions |
|----------------------------------|--|-----------------|-----------------------------|--------------|--|------------|-----------|
| 1                                | MTurk survey of immigrants and natives   | US              | Online                      | 08/2015      | English  | 426        | 140       |
| <b>First round of revisions</b>  |  |                 |                             |              |  |            |           |
| 2                                | MTurk survey of first and second generation immigrants   | US              | Online                      | 03/2016      | English  | 442        | 194       |
| <b>Second round of revisions</b> |  |                 |                             |              |  |            |           |
| 3                                | Survey of community college students   | US, Santa Clara | Online                      | 06 & 07/2016 | English  | 187        | 163       |
| 4                                | Online survey of first to third generation immigrants through Sampling International                                 | US              | Online                      | 06 & 07/2016 | English  | 1025       | 163       |
| <b>Third round of revisions</b>  |  |                 |                             |              |  |            |           |
| 5                                | Qualtrics online panel of first to fourth generation immigrants  | US              | Online                      | 01/2017      | English  | 1433       | 100       |
| <b>Fourth round of revisions</b> |  |                 |                             |              |  |            |           |
| 6                                | English as a second language students at the Office of New Americans   | US, New York    | In class<br>online or paper | 05/2017      | Arabic, Chinese,<br>English, French,<br>Spanish                                | 148        | 47        |
| 7                                | Representative survey of refugees in Switzerland   | Switzerland     | Mail-in or online           | 05/2017      | Albanian, Arabic,<br>French, German,<br>Italian, Portuguese,<br>Serbo-Croatian | 128        | 47        |
| 8                                | MTurk survey of immigrants and natives   | US              | Online                      | 07/2017      | English  | 165        | 17        |
| <b>Fifth round of revisions</b>  |  |                 |                             |              |  |            |           |
| 9                                | Face to face interviews with immigrants and natives at the South Hayward Parish                                      | US, Hayward     | Face to face                | 08/2017      | English, Spanish   | 18         | 47        |
| <b>Final round of revisions</b>  |  |                 |                             |              |  |            |           |
| 10                               | Online survey of first to third generation immigrants through Bilendi  | Germany         | Online                      | 10/2017      | German   | 726        | 60        |
| 11                               | Online survey of high income, white, first generation immigrants through YouGov                                      | US              | Online                      | 12/2017      | English  | 406        | 60        |
| 12                               | Online survey of low income immigrants in New York through NaturalizeNY  | US, New York    | Online                      | 12/2017      | English, Spanish   | 111        | 60        |
| 12                               | English as a second language students through the Alliance for Language Learners' Integration, Education and Success | US, San Jose    | In class<br>online or paper | 12/2017      | English, Spanish   | 110        | 60        |

## 2. Survey Instrument and Scoring Rules

The short form IPL-12 consists of exactly 12 questions. In the long form IPL-24 there are 49 (sub-)questions overall. The IPL-24 includes all IPL-12 questions but adds additional questions in each dimension. For some dimensions we use multi-question batteries that are aggregated to capture a distinct subdimension. For political and navigational integration, we use 4-question quizzes to measure basic knowledge in these realms. To measure political participation, we use a matrix with 11 statements. To measure bridging social capital, we use two matrix questions with five items each. In all our online surveys, each question/matrix appeared on an individual page. Paper surveys were formatted with multiple questions per page. When surveying low literacy populations or populations not used to taking surveys, we found that matrix questions tend to irritate some respondents. In such populations, individual questions should be used instead of matrix questions.

The scoring rules presented below assign values from 1 to 5 to each answer. The assigned values are subsequently summed up for each respondent. The resulting score ranges from 12 to 60 for the IPL-12 and from 24 to 120 for the IPL-24. For our analysis we rescale this score to range from 0 to 1. When rescaling the original score, it is important to consider its theoretical range. Otherwise, most statistical software will use the range in the realized data for rescaling. Rescaling in R could be done with the following code:

```
library(scales)
rescale(ipl24, to = c(0, 1), from = c(24, 120))
```

In addition to the questions outlined below, we need information on a respondent's household size to equalize household income to household size. When we use the term "household" in this survey, we think of a group of individuals that reside at the same place and routinely share their living expenses and other financial responsibilities. The term can also apply to an individual who lives alone and is solely responsible for his or her living expenses and financial responsibilities. In the survey we describe a household as "everyone with whom you share an apartment or house **and** with whom you are also related by birth, marriage, partnership, or adoption." We choose this definition to make it applicable to many different contexts. Potential survey populations for our measure include well-settled immigrants with many years of residency as well as recent refugees in refugee camps or large shelters. Household definitions that rely solely on the place of residence, like the US Census (54) or the UK Office for National Statistics (55) definition, would not be applicable in the case of refugee camps or shelters with large shared rooms. Definitions that focus on shared meals, like the Afrobarometer (56) definition, would also be problematic in cases in which food is provided by aid organizations or in cases in which work schedules make shared meals impossible. A direct referral to shared finances is problematic in circumstances in which refugees receive in-kind support or vouchers.

Below, we show individual questions and the respective codings. Questions are organized by dimension. The first two questions in each dimension are part of the IPL-12 short measure, and of the longer IPL-24. The last two questions in each dimension are only included in the IPL-24. Response values are shown in parentheses or are explained below the question. Comments and words that change depending on the country the survey is fielded in are italicized.

## A. Psychological Integration.

1. How connected do you feel with *the United States*?

- I feel an extremely close connection. (5)
- I feel a very close connection. (4)
- I feel a moderately close connection. (3)
- I feel a weak connection. (2)
- I do not feel a connection at all. (1)

*Source:* Inspired by question AQ51/TMQ70 “To what extent do you feel connected to [host country nationals]?” in the *Six Country Immigrant Integration Comparative Survey* (47).

2. How often do you feel like an outsider in *the United States*?

- Never (5)
- Rarely (4)
- Sometimes (3)
- Often (2)
- Always (1)

*Source:* Inspired by the item “I feel like an outsider in most situations” in Hagerty and Patusky’s sense of belonging instrument (22).

3. Thinking about your future, where do you want to live?

- I definitely want to live in *the United States* for the rest of my life. (5)
- I probably want to live in *the United States* for the rest of my life. (4)
- I am unsure if I want to remain in *the United States* or if I want to move to another country. (3)
- I probably want to move to another country. (2)
- I definitely want to move to another country. (1)

*Source:* This question was originally influenced by research that shows how immigrants express identity and a sense of belonging in a host country through considerations on where they would like to be buried or where they would like to have their loved ones buried (57–60). The sensitivity of topics such as death and burial can vary substantially over different cultures. To avoid measurement error due to these differences, we sought a more general way to ask how much respondents connect their long-term ambitions with a current host country.

4. How often do you feel isolated from *American* society?

- Never (5)
- Rarely (4)
- Sometimes (3)
- Often (2)
- Always (1)

*Source:* Inspired by the item “I feel isolated from others” of the revised UCLA loneliness scale (45).



**B. Linguistic Integration.** *The following questions are asked in a matrix with statements as rows and answer options as columns. See Figure S1 for a screenshot of the matrix from the online questionnaire. The matrix is introduced with the following text:*

Communicating in *English* has many components, like reading, listening, writing, and speaking skills. Please evaluate your own skills in *English*. How well can you do the following when reading, speaking, writing, or listening to *English*? Please mark one answer for each row.

*Matrix items are:*

1. I can **read** and understand the main points in simple newspaper articles on familiar subjects.
2. In a conversation, I can **speak** about familiar topics and express personal opinions.
3. I can **write** letters about my experiences, feelings, and about events.
4. I can **listen** to and understand the main points in radio or TV programs about familiar subjects.

*Answer options for each item are:*

- Very well (5)
- Well (4)
- Moderately well (3)
- Not well (2)
- Not well at all (1)

**Source:** *We consulted surveys and literature pertaining to language skills measurement (see table S1), and ultimately settled on “can-do” statements to quickly measure English language proficiency. Can-do statements are self-assessments gauging what a person “can do” in a language, like read a newspaper or listen to and understand the radio. Although we tested a variety of question formats, including questions adapted from various existing surveys and a few short quizzes, our tests and existing literature reveal that can-do statements seem to be an accurate measure that discriminates between less and more linguistically integrated immigrants (9, 19, 32). Although some may fear that individuals are not good at accurately assessing their own language abilities, studies show that people typically do a good job in this task, particularly when they are given concrete, language-related actions and asked to identify their ability to perform such actions (7, 28, 44). In sum, both the literature and our own pre-tests suggest that can-do statements are a suitable format to reach our goals.*

English

Communicating in English has many components, like reading, listening, writing, and speaking skills. Please evaluate your own skills in English. How well can you do the following when reading, speaking, writing, or listening to English? Please mark one answer for each row.

|  | Very well             | Well                  | Moderately well       | Not well              | Not well at all       |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| I can <b>read</b> and understand the main points in simple newspaper articles on familiar subjects.    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I can <b>write</b> letters about my experiences, feelings, and about events.                           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| In a conversation, I can <b>speak</b> about familiar topics and express personal opinions.             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I can <b>listen</b> to and understand the main points in radio or TV programs about familiar subjects. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |



Fig. S1. All four linguistic integration questions in one matrix.

### C. Economic Integration.

1. What is your **household's** total annual income (before taxes and deductions) from all sources? If you don't know the exact figure, please give an estimate.

Your household includes everyone with whom you share an apartment or house and with whom you are also related by birth, marriage, partnership, or adoption.

*Answer options are 10 intervals defined by the deciles of the respective country's gross household income distribution. Figure S2 shows an example screenshot from the online questionnaire for the United States. The answers are re-coded as follows:*

- Income brackets are re-coded to the middle of the bracket. The lowest bracket is re-coded to the equivalent of a low monthly income (i.e. \$1,000 in the United States). The highest bracket is re-coded to the sum of the starting value of the highest bracket and the difference between the highest and the lowest value of the second highest bracket.
- The new values are divided by the square root of the respondent's household size.
- Using public income statistics, the country's gross median equivalized household income is used as a reference category for further re-coding. If no data on the gross median equivalized household income is available, it can be approximated from census data (or similar) using the same re-coding outlined above.
- The country's gross median equivalized household (gmeH) income is then used to create 5 categories:
  - $[0, \text{gmeH}/3]$  (1)
  - $(\text{gmeH}/3, \text{gmeH}/1.5]$  (2)
  - $(\text{gmeH}/1.5, \text{gmeH}]$  (3)
  - $(\text{gmeH}, \text{gmeH} + (\text{gmeH}/3)]$  (4)
  - $> \text{gmeH} + (\text{gmeH}/3)$  (5)
- The re-coded gross household income is then assigned to one of the outlined categories.

**Example:** If a US family of three has a household income of \$68,000, a member of this family would answer the income questions with option six, \$60,001 to \$75,000. This answer is recoded to the middle of the interval, \$67,500, and divided by the square root of three:  $\frac{\$67500}{\sqrt{3}} \approx \$38,971$ . Using data from the 2014 American Community Survey (54), we estimate the gross median equivalized household income in the US to be \$42,900. Based on this value, the categories for the final coding are: \$0 to \$14,300 = 1; \$14,301 to \$28,600 = 2; \$28,601 to \$42,900 = 3; \$42,901 to \$57,200 = 4; \$57,201 and higher = 5. With a coded equivalized household income of 38,971, the family would fall into the third interval and the respondent would be coded accordingly. Note that we use the gross median equivalized household income for the scaling of the coded categories instead of deciles of the income distribution since the median is more widely available as an aggregate statistic in many countries.

To avoid missing values on this sensitive question, we also implement unfolding questions (Lavrakas 2011). If a respondent declines to answer, we follow up with a question asking if their income falls above or below the upper limit of the second quintile of the gross household income distribution (upper limit of answer option 4 in the original question). Depending on the answer we then ask if their income falls above or below the upper limit of the first/fourth quintile. In the first case, we now know whether the respondent's income falls in the first or the second quintile. In the second case we either know that the respective income falls in the fifth quintile or we continue asking whether the respondent's income falls above or below the upper limit of the third quintile. After these questions, we know the income quintile of the respondent's household income. We then follow the re-coding steps outlined above.

**Source:** We ask for annual income before deductions because this income is usually used to write and discuss employment contracts. We therefore assume that this number is most easily remembered by most respondents. We also avoid measurement error due to country differences in calculating net income.

What is your **household's** total annual income (before taxes and deductions) from all sources? If you don't know the exact figure, please give an estimate.

Your household includes everyone with whom you share an apartment or house **and** with whom you are also related by birth, marriage, partnership, or adoption.

|                    |                      |
|--------------------|----------------------|
| Under \$15,000     | \$60,001 to 75,000   |
| \$15,001 to 25,000 | \$75,001 to 90,000   |
| \$25,001 to 35,000 | \$90,001 to 120,000  |
| \$35,001 to 45,000 | \$120,001 to 165,000 |
| \$45,001 to 60,000 | \$165,001 or above   |

>>

Fig. S2. Question on household income with income intervals for the US.

2. Which of these descriptions best applies to what you have been doing for the last four weeks? Please select only one.
- In paid work, even if away temporarily (employee, self-employed, working for your family business) (5)
  - In school, even if on vacation (3)
  - Unemployed and actively looking for a job (1)
  - Unemployed and not actively looking for a job (1)
  - Permanently sick or disabled (3)
  - Retired (3)
  - In military service (5)
  - In community service (3)
  - Doing unpaid housework, looking after children or other persons (3)
  - Other (please specify)

Answers are coded as 1 (Unemployed and actively looking for a job; Unemployed and not actively looking for a job), 3 (In school, even if on vacation; Permanently sick or disabled; Retired; In community service; Doing unpaid housework, looking after children or other persons), and 5 (In paid work, even if away temporarily; In military service; ). This re-coding in three groups roughly follows the American Community Survey coding in the three categories “Employed”, “Not in Labor Force”, and “Unemployed” (54).

**Source:** This question is inspired by question F17a CARD 63 of the European Social Survey Round 8 (16) and re-coded according to ACS categories (54).

3. This question is asked in a matrix with statements as rows and answer options as columns. See Figure S3 for an example from the online questionnaire. The matrix is introduced with the following text:

Please indicate whether your household currently can or cannot afford to pay an unexpected, but necessary, expense of...

Matrix items are:

- \$500
- \$1,000
- \$10,000
- \$50,000

Answer options for each item are:

- Yes, can afford (1)
- No, cannot afford (0)

The final score is the sum of all answers plus one.

The values shown above are values for the United States. To adopt these values to any other country, start by finding the highest value. The highest value is defined as the respective country's median household income rounded to the next 10,000. The second highest value is defined as a fifth of the highest value. The third highest value is defined as a fiftieth of the highest value. The lowest value is defined as a hundredths of the highest value.

**Source:** This question was created by the research team.

English

Please indicate whether your household currently can or cannot afford to pay an unexpected, but necessary, expense of...

|          | Yes, can afford       | No, cannot afford     |
|----------|-----------------------|-----------------------|
| \$500    | <input type="radio"/> | <input type="radio"/> |
| \$1,000  | <input type="radio"/> | <input type="radio"/> |
| \$10,000 | <input type="radio"/> | <input type="radio"/> |
| \$50,000 | <input type="radio"/> | <input type="radio"/> |

>>

Fig. S3. Matrix with questions on unexpected, but necessary, expenses.

4. How satisfied are you with your current employment situation?

Your employment situation refers to the answer you gave in a previous question (either in paid work, in school, unemployed, permanently sick or disabled, retired, in the military, in community service, doing unpaid housework, looking after children or other persons, or other status).

- Very satisfied (5)

- Somewhat satisfied (4)
- Neither satisfied nor dissatisfied (3)
- Somewhat dissatisfied (2)
- Very dissatisfied (1)

*Source: This question is inspired by Q88 of the 2015 European Working Conditions Surveys (EWCS) (18). Note that we tried to balance measurement precision with other criteria that we set up for our measure, namely that every question should apply for every respondent. Thus, despite its desirability in assessing integration, we refrained from including occupational status in our measure as it is not well-defined for the unemployed, retirees and homemakers.*

#### D. Political Integration.

1. How well do you understand the important political issues facing *the United States*?

- Very well (5)
- Well (4)
- Moderately well (3)
- Not well (2)
- Not well at all (1)

*Source:* This question is inspired by the “Good understanding of political issues” question (*effic\_undstd*) of the American National Election Studies in the 2012 block on efficacy and government responsiveness (3).

2. In the last 12 months, how often did you typically discuss major political issues facing *the United States* with others?

- Never (1)
- Once a year (2)
- Once a month (3)
- Once a week (4)
- Almost every day (5)

*Source:* This question is inspired by the “Days in past week discussed politics” question (*discuss\_discpstwk*) of the American National Election Studies in the 2012 block on efficacy and government responsiveness (3).

3. Item 3 in political integration is the sum of four short quiz questions. Each right answer counts one point and the final score is the sum of all points plus one. The quiz is introduced by the following text:

*Source:* Created by the research team.

Now we would like to ask you some questions about public policy and current events. **Please answer these questions from memory, without looking up the answers or asking another person.** Not many people can answer every question correctly, and we would be very grateful if you would answer the questions to the best of your ability.

(a) In politics, people often talk about a left-right dimension. Can you please tell us if the following sentence is true or not? *The question randomly selects one of the two sentences below:*

- The *Republican Party* is considered to be left of the *Democratic Party*.
- The *Republican Party* is considered to be right of the *Democratic Party*.

*Answer options are:*

- True
- False
- Don't know

*If a true sentence is shown, “True” is coded as 1 and “False” as 0. The coding is reversed if a wrong sentence is shown. “Don't know” is always coded as 0. Outside the United States, the party names should be substituted with the two largest parties or the parties that are commonly used to define the country's left-right dimension.*

(b) To which of the following parties does the current *President of the United States* belong?

- *Republican Party*
- *Democratic Party*
- Other
- Don't know

*Outside the United States, “President” should be substituted with the appropriate title for the elected head of government or the elected head of state. If in doubt, the office more visible to the average citizen should be selected. The party names should be substituted with the two largest parties or the parties that are commonly used to define the country's left-right dimension. The right answer is then coded with 1, all other answers with 0. “Other” can be the right answer. “Don't know” should never be the right answer. Directly after elections, the term “acting head of government” or “acting head of state” can be used.*

(c) Which of the following parties occupies the largest number of seats in the *Senate of the United States*?

- *Republican Party*
- *Democratic Party*
- *Other*
- *Don't know*

*Outside the United States, "Senate" should be substituted with the legislative chamber that is usually more prominently considered in news and reporting. The party names should be substituted with the two largest parties or the parties that are commonly used to define the country's left-right dimension. The right answer is then coded with 1, all other answers with 0. "Other" can be the right answer. "Don't know" should never be the right answer.*

(d) What is the minimum age that a person must be to vote in a general election in *the United States*?

*Answer options are ages from 15 to 21 (or the legal voting age if older than 21), "There is no minimum age", and "Don't know". The right answer is coded as 1, all other answers as 0.*

4. *The following question is presented in a matrix with statements as rows and answer options as columns. The matrix is introduced with the following text:*

There are different ways of trying to improve things in *the United States* or help prevent things from going wrong. During the last 12 months, have you done any of the following? Have you...

*Statements are:*

- ...tried to convince somebody to change their political opinion?
- ...tried to influence others on how to vote?
- ...made a political statement in a public setting or online regarding politics in *the United States*?
- ...engaged in public or online discussions regarding politics in *the United States*?
- ...contacted a politician, or a government official?
- ...worked in a political party or action group?
- ...worn or displayed a political badge, sticker, or sign?
- ...signed a petition?
- ...taken part in a lawful public demonstration?
- ...boycotted certain products?
- ...collected signatures for a petition?

*Answer options are:*

- Yes (1)
- No (0)

*For the final score, the sum of all "Yes" answers is taken. This sum is then recoded in a way that all sums greater than 4 are coded as 5, a sum of 3 or 4 is coded as 4, a sum of 2 is coded as 3, a sum of 1 is coded as 2 and a sum of 0 is coded as 1.*

**Source:** *This question is inspired by questions B15 to B22 of the European Social Survey Round 8 (16) and "MOBILPO" items in the American National Election Studies (3).*



**E. Social Integration.** In order to measure social integration, we need to refer to the rooted population of a given country or region. Here, we face a trade-off between simplicity and precision. We believe that more precise formulations like “American citizens”, “Americans born in the United States”, or “rooted Americans” complicate the survey questions and assume that respondents know about the place of birth or the legal status of all members in their social network. To better understand what potential respondents think of when confronted with just the term “Americans” we conducted think-aloud interviews with immigrants and natives in the San Francisco East Bay. We found that the large majority identified Americans by citizenship and many explicitly mentioned naturalized citizens. Based on this result, we believe that this short form will be feasible in most countries. In regions with high salience of ethno-nationalism more detailed terms might be necessary.

1. In the last 12 months, how often did you eat dinner with *Americans* who are not part of your family?

- Never (1)
- Once a year (2)
- Once a month (3)
- Once a week (4)
- Almost every day (5)

*Source:* This question was created by the research team. By directly measuring the frequency of a social interaction, the question has face validity for measuring social integration. The focus on shared meals is derived from Max Weber’s concept of commensality. According to Weber, commensality signals social equivalence or acceptance in different societies and religions around the world (61).

2. Please think about the *Americans* in your address book or your phone contacts. With how many of them did you have a conversation - either by phone, messenger chat, or text exchange - in the last 4 weeks?

- 0 (1)
- 1 to 2 (2)
- 3 to 6 (3)
- 7 to 14 (4)
- 15 or more (5)

*Source:* This question was created by the research team.

3. The following question is presented as two matrix questions with statements as rows and answer options as columns. See Figure S4 for a screenshot example from the online questionnaire. The first matrix is introduced with the following text:

People sometimes participate in different kinds of groups or associations. For each group listed below, how often do you participate in a group activity?

*Statements are:*

- A group related to your **job**, like a union, business, or professional organization
- A group related to your **religious beliefs**, like a church, mosque, synagogue, or other religious organization
- A group related to your **hobbies**, like a sports, leisure, or cultural group
- A group related to a **social or political cause**, such as a voluntary organization or political party
- Another voluntary organization

*Answer options are:*

- Participate at least once per week (5)
- Participate at least once per month (4)
- Participate at least once per year (3)
- Belong but do not actively participate (2)
- Do not belong nor participate (1)

The second matrix displays the same statements as the first matrix. In online or phone surveys statements can be dropped from the second matrix if a respondent answered "Do not belong nor participate" in the first matrix. The second matrix is introduced by the following text:

If you think about members of the groups you are participating in, how many of them are Americans?

Answer options are:

- All of them (5)
- Most of them (4)
- About half of them (3)
- None of them (2)
- Do not belong nor participate (0)

Before the score for this question is calculated, it is important to check the answers for consistency. If a respondent scored "1" for an item in the first matrix, the score for this item in the second matrix has to be "0" and the other way around. To calculate the final score, the product of the scores from matrix one and matrix two is calculated for each item and each respondent. Then, each respondent is assigned the highest realized product. The range of the products should be 0 to 25. The realized products are then rescaled to a range from 1 to 5. The resulting values are rounded to the next highest integer.

**Example:** A respondent answers "Participate at least once per year" (3) to the "job" item, "Participate at least once per week" (5) to the "religious beliefs" item, and "Do not belong nor participate" (1) to all other items. In the subsequent questions the same respondent answers "Most of them" (4) to the "job" item and "About half of them" (3) to the "religious beliefs" item. The product for the "job" item is then  $3 * 4 = 12$  and for "religious beliefs" it is  $5 * 3 = 15$ . The higher of the two products (15 for "religious beliefs") is then rescaled and added to the IPL-24 Integration Index.

**Source:** This question is inspired by Robert Putnam's concepts of bridging and bonding social capital (62). The question items are influenced by "ORGANIZATIONAL AND CHURCH ACTIVITY" items in the American National Election Studies (3) and the Social Capital Community Survey (48).

4. Many people help each other with everyday favors, such as getting rides, borrowing a little money, or babysitting. In the last 12 months, how often have you provided such favors to Americans?
- Never (1)
  - Once a year (2)
  - Once a month (3)
  - Once a week (4)
  - Almost every day (5)

**Source:** This question was inspired by the "depend for everyday favors" question (R5525) of the Urban Poverty and Family Life Survey of Chicago (51). In the case of integration, the directionality of the original question is unclear. We argue that in our setting, providing favors is more informative than depending on favors.

People sometimes participate in different kinds of groups or associations. For each group listed below, how often do you participate in a group activity?

|  | Participate at least once per week | Participate at least once per month | Participate at least once per year | Belong but do not actively participate | Do not belong nor participate |
|--|------------------------------------|-------------------------------------|------------------------------------|--|-------------------------------|
| A group related to your <b>job</b> , like a union, business, or professional organization                            | <input type="radio"/>              | <input type="radio"/>               | <input type="radio"/>              | <input type="radio"/>                  | <input type="radio"/>         |
| A group related to your <b>religious beliefs</b> , like a church, mosque, synagogue, or other religious organization | <input type="radio"/>              | <input type="radio"/>               | <input type="radio"/>              | <input type="radio"/>                  | <input type="radio"/>         |
| A group related to your <b>hobbies</b> , like a sports, leisure, or cultural group                                   | <input type="radio"/>              | <input type="radio"/>               | <input type="radio"/>              | <input type="radio"/>                  | <input type="radio"/>         |
| A group related to a <b>social or political cause</b> , such as a voluntary organization or political party          | <input type="radio"/>              | <input type="radio"/>               | <input type="radio"/>              | <input type="radio"/>                  | <input type="radio"/>         |
| Another voluntary organization   | <input type="radio"/>              | <input type="radio"/>               | <input type="radio"/>              | <input type="radio"/>                  | <input type="radio"/>         |



Fig. S4. Matrix measuring group membership.

English

If you think about members of the groups you are participating in, how many of them are Americans?

|  | All of them           | Most of them          | About half of them    | Few of them           | None of them          | Do not belong nor participate |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------------------------|
| A group related to your <b>job</b> , like a union, business, or professional organization                            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>         |
| A group related to your <b>religious beliefs</b> , like a church, mosque, synagogue, or other religious organization | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>         |
| A group related to your <b>hobbies</b> , like a sports, leisure, or cultural group                                   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>         |
| A group related to a <b>social or political cause</b> , such as a voluntary organization or political party          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>         |
| Another voluntary organization   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>         |

>>

Fig. S5. Matrix measuring the share of natives for each social group.

## F. Navigational Integration.

1. The first two items are presented in a single matrix with statements as rows and answer options as columns. See Figure S6 for a screenshot example from the online questionnaire. The matrix is introduced with the following text:

In this country, how difficult or easy would it be for you to do each of the following?

Items are:

- See a doctor
- Search for a job (find proper listings)

Answer options are:

- Very difficult (1)
- Somewhat difficult (2)
- Neither difficult, nor easy (3)
- Somewhat easy (4)
- Very easy (5)

3. The third question can be added to the matrix with the first two questions. The answer options remain the same. The statement reads:

Get help with legal problems

*Source:* All items in this matrix were created by the research team.

4. Item 4 in navigational integration is the sum of four short quiz questions. Each right answer counts one point and the final score is the sum of all points plus one. For all quiz questions, the answer options and/or the correct answer need to be adopted to local laws and conventions. The quiz is introduced by the following text:

*Source:* All items of the navigational integration test were created by the research team.

Now we would like to ask you some questions about daily life in the United States. **Please answer these questions from memory, without looking up the answers or asking another person.** Not many people can answer every question correctly, and we would be very grateful if you would answer the questions to the best of your ability.

- (a) How many drinks (a can or glass of beer, a glass of wine, or a shot of liquor), in about an hour time span, can an average person have before he or she is too intoxicated to legally drive a car?
  - No alcoholic drinks at all. (0)
  - Most people can legally drive after one or two drinks. (1)
  - A maximum of five drinks, as long as the person can drive safely. (0)
  - There is no limit, as long as the person can drive safely. (0)
  - Don't know (0)
- (b) How do most people in *the United States* typically pay their income taxes?
  - Taxes are automatically deducted from paychecks, and no special filing is necessary (0)
  - Employers have the responsibility to file forms for their workers. (0)
  - People can pay their taxes at a bank or a municipal office. (0)
  - Workers must file their tax returns with the federal government. (1)
  - Don't know (0)
- (c) If you were sending a letter in *the United States*, what is the correct way to write the address on the envelope? Please select one format from the list below.
  - 101 2nd Street, Mary Smith, Albany, 12204, NY (0)
  - Mary Smith, 101 2nd Street, Albany, NY, 12204 (1)
  - Mary Smith, 2nd Street 101, Albany, NY, 12204 (0)
  - Mary Smith, 101 2nd Street, 12204, Albany, NY (0)
  - Don't know (0)
- (d) In *the United States*, how should you seek medical help for a condition like chronic back pain?
  - Call an ambulance (0)
  - Go to the emergency room (0)
  - See your general practitioner (1)
  - Ask a supervisor at work (0)
  - Don't know (0)

English

In this country, how difficult or easy would it be for you to do each of the following?

|   | Very difficult        | Somewhat difficult    | Neither difficult, nor easy | Somewhat easy         | Very easy             |
|---|-----------------------|-----------------------|-----------------------------|-----------------------|-----------------------|
| See a doctor                            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       | <input type="radio"/> | <input type="radio"/> |
| Get help for legal problems             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       | <input type="radio"/> | <input type="radio"/> |
| Search for a job (find proper listings) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>       | <input type="radio"/> | <input type="radio"/> |



Fig. S6. Navigational integration matrix with all three statements.

### 3. Additional results

**A. Sample descriptives.** Below we show descriptive statistics of the data used for this paper.

**Table S3. Sample Descriptives; Mean and Standard Deviation**

|                           | Sample A,<br>USA |       | Sample B,<br>Germany |       | Sample C,<br>USA, New York |       | Sample D,<br>USA, San Jose |       |
|---------------------------|------------------|-------|----------------------|-------|----------------------------|-------|----------------------------|-------|
|                           | Mean             | SD    | Mean                 | SD    | Mean                       | SD    | Mean                       | SD    |
| N                         | 406              |       | 235                  |       | 93                         |       | 53                         |       |
| Age                       | 59.36            | 14.72 | 37.98                | 12.69 | 36.38                      | 12.78 | 38.68                      | 13.31 |
| Residency in Host Country | 34.73            | 20.21 | 20.43                | 10.96 | 11.95                      | 8.42  | 3.95                       | 4.07  |
| Household Size            | 2.42             | 1.18  | 2.77                 | 1.47  | 3.98                       | 1.57  | 3.6                        | 2.05  |
| % Female                  | 35.96            |       | 63.83                |       | 76.34                      |       | 92.45                      |       |

**B. Variable descriptives.** Below we show descriptive statistics of the IPL-12 and IPL-24 Integration Indexes, the sub-dimensions, all individual questions, and variables used for regression analysis.

**Table S4. Descriptive statistics for Sample A**

| Statistic          | N   | Median | Mean | St. Dev. | Pctl(25) | Pctl(75) |
|--------------------|-----|--------|------|----------|----------|----------|
| IPL-12             | 406 | 0.81   | 0.80 | 0.10     | 0.75     | 0.88     |
| IPL-24             | 406 | 0.80   | 0.78 | 0.10     | 0.73     | 0.85     |
| Psy. Int. 12       | 406 | 0.75   | 0.75 | 0.23     | 0.62     | 1.00     |
| Psy. Int. 24       | 406 | 0.81   | 0.75 | 0.22     | 0.62     | 0.94     |
| Connectedness      | 406 | 4      | 4.16 | 1.01     | 4        | 5        |
| Outsider           | 406 | 4      | 3.87 | 1.09     | 3        | 5        |
| Future             | 406 | 5      | 4.15 | 1.09     | 4        | 5        |
| Isolated           | 406 | 4      | 3.78 | 1.07     | 3        | 5        |
| Ling. Int. 12      | 406 | 1.00   | 0.97 | 0.10     | 1.00     | 1.00     |
| Ling. Int. 24      | 406 | 1.00   | 0.96 | 0.11     | 1.00     | 1.00     |
| Read               | 406 | 5      | 4.90 | 0.39     | 5        | 5        |
| Speak              | 406 | 5      | 4.84 | 0.48     | 5        | 5        |
| Write              | 406 | 5      | 4.80 | 0.56     | 5        | 5        |
| Listen             | 406 | 5      | 4.88 | 0.49     | 5        | 5        |
| Econ. Int. 12      | 406 | 0.8    | 0.81 | 0.18     | 0.8      | 1        |
| Econ. Int. 24      | 406 | 0.81   | 0.78 | 0.15     | 0.69     | 0.88     |
| Income             | 406 | 5      | 4.50 | 0.79     | 4        | 5        |
| Employment         | 406 | 5      | 3.96 | 1.10     | 3        | 5        |
| Expenses           | 406 | 4      | 3.93 | 1.08     | 3        | 5        |
| Empl. Satisfaction | 406 | 4      | 4.14 | 1.07     | 4        | 5        |
| Pol. Int. 12       | 406 | 1.00   | 0.86 | 0.19     | 0.75     | 1.00     |
| Pol. Int. 24       | 406 | 0.88   | 0.83 | 0.19     | 0.75     | 1.00     |
| Understanding      | 406 | 5      | 4.53 | 0.80     | 4        | 5        |
| Discuss            | 406 | 5      | 4.34 | 0.98     | 4        | 5        |
| Pol. Quiz          | 406 | 5      | 4.68 | 0.73     | 5        | 5        |
| Pol. Action        | 406 | 4      | 3.72 | 1.50     | 3        | 5        |
| Soc. Int. 12       | 406 | 0.62   | 0.58 | 0.22     | 0.50     | 0.75     |
| Soc. Int. 24       | 406 | 0.56   | 0.54 | 0.20     | 0.38     | 0.69     |
| Dinner             | 406 | 3      | 3.06 | 0.99     | 3        | 4        |
| Contacts           | 406 | 4      | 3.61 | 1.12     | 3        | 4.8      |
| Organizations      | 406 | 4      | 3.30 | 1.59     | 1        | 5        |
| Favors             | 406 | 3      | 2.70 | 1.17     | 2        | 3        |
| Nav. Int. 12       | 406 | 0.88   | 0.83 | 0.22     | 0.75     | 1.00     |
| Nav. Int. 24       | 406 | 0.88   | 0.82 | 0.18     | 0.75     | 0.94     |
| Doctor             | 406 | 5      | 4.50 | 0.93     | 4        | 5        |
| Jobs               | 406 | 5      | 4.13 | 1.11     | 3        | 5        |
| Legal              | 406 | 5      | 4.20 | 1.04     | 4        | 5        |
| Nav. Quiz          | 406 | 5      | 4.33 | 0.81     | 4        | 5        |
| Female             | 406 | 0      | 0.36 | 0.48     | 0        | 1        |
| Schooling          | 406 | 3.25   | 3.23 | 0.85     | 2.68     | 3.64     |
| Age                | 406 | 3.47   | 3.38 | 0.84     | 2.92     | 4.04     |
| Residency          | 406 | 1.79   | 1.83 | 1.06     | 1.00     | 2.74     |
| Shared Language    | 406 | 0      | 0.47 | 0.50     | 0        | 1        |

Aggregates rescaled to 0-1 range, individual variables range from 1 to 5.

Schooling, Age, and Residency are coded in standard deviations of the pooled data.

SD Schooling = 5.22y, SD Age = 17.55y, SD Residency = 18.98y



**Table S5. Descriptive statistics for Sample B**

| Statistic          | N   | Median | Mean | St. Dev. | Pct(25) | Pct(75) |
|--------------------|-----|--------|------|----------|---------|---------|
| IPL-12             | 235 | 0.71   | 0.69 | 0.13     | 0.60    | 0.77    |
| IPL-24             | 235 | 0.68   | 0.67 | 0.12     | 0.60    | 0.74    |
| Psy. Int. 12       | 235 | 0.75   | 0.73 | 0.20     | 0.62    | 0.88    |
| Psy. Int. 24       | 235 | 0.75   | 0.73 | 0.18     | 0.62    | 0.88    |
| Connectedness      | 235 | 4      | 3.97 | 0.96     | 3       | 5       |
| Outsider           | 235 | 4      | 3.86 | 1.01     | 3       | 5       |
| Future             | 235 | 4      | 3.94 | 1.01     | 3       | 5       |
| Isolated           | 235 | 4      | 3.83 | 1.04     | 3       | 5       |
| Ling. Int. 12      | 235 | 1      | 0.92 | 0.15     | 0.9     | 1       |
| Ling. Int. 24      | 235 | 1.00   | 0.92 | 0.16     | 0.88    | 1.00    |
| Read               | 235 | 5      | 4.75 | 0.62     | 5       | 5       |
| Speak              | 235 | 5      | 4.63 | 0.69     | 4       | 5       |
| Write              | 235 | 5      | 4.58 | 0.74     | 4       | 5       |
| Listen             | 235 | 5      | 4.72 | 0.68     | 5       | 5       |
| Econ. Int. 12      | 235 | 0.62   | 0.63 | 0.26     | 0.38    | 0.88    |
| Econ. Int. 24      | 235 | 0.62   | 0.60 | 0.21     | 0.44    | 0.75    |
| Income             | 235 | 3      | 3.02 | 1.28     | 2       | 4       |
| Employment         | 235 | 5      | 4.01 | 1.26     | 3       | 5       |
| Expenses           | 235 | 3      | 2.72 | 1.08     | 2       | 3       |
| Empl. Satisfaction | 235 | 4      | 3.78 | 1.14     | 3       | 5       |
| Pol. Int. 12       | 235 | 0.62   | 0.63 | 0.23     | 0.50    | 0.75    |
| Pol. Int. 24       | 235 | 0.62   | 0.60 | 0.19     | 0.44    | 0.75    |
| Understanding      | 235 | 4      | 3.73 | 1.12     | 3       | 5       |
| Discuss            | 235 | 3      | 3.34 | 1.10     | 3       | 4       |
| Pol. Quiz          | 235 | 4      | 4.14 | 1.07     | 4       | 5       |
| Pol. Action        | 235 | 2      | 2.33 | 1.43     | 1       | 4       |
| Soc. Int. 12       | 235 | 0.50   | 0.49 | 0.23     | 0.38    | 0.62    |
| Soc. Int. 24       | 235 | 0.44   | 0.45 | 0.20     | 0.31    | 0.56    |
| Dinner             | 235 | 3      | 2.69 | 1.03     | 2       | 3       |
| Contacts           | 235 | 3      | 3.24 | 1.14     | 2       | 4       |
| Organizations      | 235 | 3      | 2.61 | 1.55     | 1       | 4       |
| Favors             | 235 | 3      | 2.65 | 1.17     | 2       | 4       |
| Nav. Int. 12       | 235 | 0.75   | 0.71 | 0.23     | 0.50    | 0.88    |
| Nav. Int. 24       | 235 | 0.69   | 0.71 | 0.19     | 0.56    | 0.88    |
| Doctor             | 235 | 4      | 4.24 | 0.91     | 4       | 5       |
| Jobs               | 235 | 3      | 3.43 | 1.19     | 3       | 4       |
| Legal              | 235 | 4      | 3.60 | 1.12     | 3       | 5       |
| Nav. Quiz          | 235 | 4      | 4.09 | 0.87     | 4       | 5       |
| Female             | 235 | 1      | 0.64 | 0.48     | 0       | 1       |
| Schooling          | 235 | 2.49   | 2.41 | 1.00     | 1.91    | 3.06    |
| Age                | 235 | 1.99   | 2.16 | 0.72     | 1.57    | 2.59    |
| Residency          | 235 | 1.05   | 1.08 | 0.58     | 0.68    | 1.42    |
| Shared Language    | 235 | 0      | 0.03 | 0.16     | 0       | 0       |

Aggregates rescaled to 0-1 range, individual variables range from 1 to 5.

Schooling, Age, and Residency are coded in standard deviations of the pooled data.

SD Schooling = 5.22y, SD Age = 17.55y, SD Residency = 18.98y

**Table S6. Descriptive statistics for Sample C**

| Statistic          | N  | Median | Mean | St. Dev. | Pctl(25) | Pctl(75) |
|--------------------|----|--------|------|----------|----------|----------|
| IPL-12             | 93 | 0.56   | 0.55 | 0.11     | 0.46     | 0.62     |
| IPL-24             | 93 | 0.52   | 0.52 | 0.10     | 0.46     | 0.58     |
| Psy. Int. 12       | 93 | 0.8    | 0.77 | 0.17     | 0.6      | 0.9      |
| Psy. Int. 24       | 93 | 0.75   | 0.77 | 0.16     | 0.69     | 0.88     |
| Connectedness      | 93 | 4      | 3.97 | 0.91     | 3        | 5        |
| Outsider           | 93 | 4      | 4.23 | 0.82     | 4        | 5        |
| Future             | 93 | 5      | 4.40 | 0.93     | 4        | 5        |
| Isolated           | 93 | 4      | 3.74 | 1.01     | 3        | 5        |
| Ling. Int. 12      | 93 | 0.6    | 0.63 | 0.27     | 0.5      | 0.9      |
| Ling. Int. 24      | 93 | 0.6    | 0.61 | 0.26     | 0.4      | 0.8      |
| Read               | 93 | 4      | 3.66 | 1.07     | 3        | 4        |
| Speak              | 93 | 3      | 3.38 | 1.21     | 2        | 4        |
| Write              | 93 | 3      | 3.29 | 1.15     | 2        | 4        |
| Listen             | 93 | 4      | 3.51 | 1.11     | 3        | 4        |
| Econ. Int. 12      | 93 | 0.5    | 0.38 | 0.25     | 0.2      | 0.5      |
| Econ. Int. 24      | 93 | 0.4    | 0.37 | 0.19     | 0.2      | 0.5      |
| Income             | 93 | 1      | 1.53 | 0.95     | 1        | 2        |
| Employment         | 93 | 3      | 3.47 | 1.65     | 3        | 5        |
| Expenses           | 93 | 2      | 1.81 | 0.91     | 1        | 2        |
| Empl. Satisfaction | 93 | 3      | 3.13 | 1.30     | 2        | 4        |
| Pol. Int. 12       | 93 | 0.50   | 0.55 | 0.23     | 0.38     | 0.75     |
| Pol. Int. 24       | 93 | 0.50   | 0.48 | 0.18     | 0.38     | 0.56     |
| Understanding      | 93 | 4      | 3.66 | 1.01     | 3        | 4        |
| Discuss            | 93 | 3      | 2.74 | 1.39     | 1        | 4        |
| Pol. Quiz          | 93 | 4      | 3.61 | 0.87     | 3        | 4        |
| Pol. Action        | 93 | 1      | 1.61 | 1.09     | 1        | 2        |
| Soc. Int. 12       | 93 | 0.38   | 0.40 | 0.25     | 0.25     | 0.62     |
| Soc. Int. 24       | 93 | 0.38   | 0.37 | 0.21     | 0.19     | 0.50     |
| Dinner             | 93 | 2      | 2.47 | 1.35     | 1        | 4        |
| Contacts           | 93 | 3      | 2.70 | 1.07     | 2        | 3        |
| Organizations      | 93 | 2      | 2.43 | 1.49     | 1        | 4        |
| Favors             | 93 | 2      | 2.33 | 1.32     | 1        | 3        |
| Nav. Int. 12       | 93 | 0.50   | 0.55 | 0.21     | 0.38     | 0.75     |
| Nav. Int. 24       | 93 | 0.50   | 0.52 | 0.15     | 0.44     | 0.62     |
| Doctor             | 93 | 4      | 3.73 | 1.09     | 3        | 5        |
| Jobs               | 93 | 3      | 2.63 | 1.01     | 2        | 3        |
| Legal              | 93 | 3      | 3.00 | 1.10     | 2        | 4        |
| Nav. Quiz          | 93 | 3      | 2.96 | 0.90     | 2        | 4        |
| Female             | 93 | 1      | 0.76 | 0.43     | 1        | 1        |
| Schooling          | 93 | 2.30   | 2.34 | 1.03     | 1.91     | 2.87     |
| Age                | 93 | 1.88   | 2.07 | 0.73     | 1.48     | 2.51     |
| Residency          | 93 | 0.47   | 0.63 | 0.44     | 0.37     | 0.74     |
| Shared Language    | 93 | 0      | 0.00 | 0.00     | 0        | 0        |

Aggregates rescaled to 0-1 range, individual variables range from 1 to 5.

Schooling, Age, and Residency are coded in standard deviations of the pooled data.

SD Schooling = 5.22y, SD Age = 17.55y, SD Residency = 18.98y

**Table S7. Descriptive statistics for Sample D**

| Statistic          | N  | Median | Mean | St. Dev. | Pctl(25) | Pctl(75) |
|--------------------|----|--------|------|----------|----------|----------|
| IPL-12             | 53 | 0.46   | 0.46 | 0.11     | 0.38     | 0.54     |
| IPL-24             | 53 | 0.46   | 0.45 | 0.09     | 0.40     | 0.52     |
| Psy. Int. 12       | 53 | 0.50   | 0.50 | 0.25     | 0.38     | 0.75     |
| Psy. Int. 24       | 53 | 0.56   | 0.54 | 0.22     | 0.44     | 0.69     |
| Connectedness      | 53 | 3      | 3.02 | 1.10     | 2        | 4        |
| Outsider           | 53 | 3      | 2.98 | 1.17     | 2        | 3        |
| Future             | 53 | 4      | 3.66 | 0.94     | 3        | 4        |
| Isolated           | 53 | 3      | 3.06 | 1.08     | 2        | 4        |
| Ling. Int. 12      | 53 | 0.50   | 0.51 | 0.19     | 0.38     | 0.62     |
| Ling. Int. 24      | 53 | 0.50   | 0.50 | 0.17     | 0.38     | 0.62     |
| Read               | 53 | 3      | 3.26 | 0.81     | 3        | 4        |
| Speak              | 53 | 3      | 2.85 | 0.89     | 2        | 3        |
| Write              | 53 | 3      | 2.87 | 0.76     | 2        | 3        |
| Listen             | 53 | 3      | 2.96 | 0.83     | 2        | 3        |
| Econ. Int. 12      | 53 | 0.62   | 0.53 | 0.22     | 0.38     | 0.75     |
| Econ. Int. 24      | 53 | 0.50   | 0.52 | 0.17     | 0.38     | 0.62     |
| Income             | 53 | 3      | 3.08 | 1.73     | 1        | 5        |
| Employment         | 53 | 3      | 3.19 | 1.06     | 3        | 3        |
| Expenses           | 53 | 3      | 2.83 | 1.27     | 2        | 4        |
| Empl. Satisfaction | 53 | 3      | 3.25 | 1.14     | 3        | 4        |
| Pol. Int. 12       | 53 | 0.38   | 0.44 | 0.25     | 0.25     | 0.62     |
| Pol. Int. 24       | 53 | 0.31   | 0.35 | 0.17     | 0.25     | 0.50     |
| Understanding      | 53 | 3      | 2.83 | 0.99     | 2        | 4        |
| Discuss            | 53 | 3      | 2.70 | 1.32     | 2        | 4        |
| Pol. Quiz          | 53 | 3      | 2.72 | 1.17     | 2        | 4        |
| Pol. Action        | 53 | 1      | 1.30 | 0.85     | 1        | 1        |
| Soc. Int. 12       | 53 | 0.38   | 0.33 | 0.22     | 0.12     | 0.50     |
| Soc. Int. 24       | 53 | 0.31   | 0.35 | 0.18     | 0.25     | 0.44     |
| Dinner             | 53 | 2      | 2.26 | 1.09     | 1        | 3        |
| Contacts           | 53 | 2      | 2.42 | 1.08     | 2        | 3        |
| Organizations      | 53 | 2      | 2.38 | 1.43     | 1        | 3        |
| Favors             | 53 | 3      | 2.57 | 1.22     | 1        | 3        |
| Nav. Int. 12       | 53 | 0.50   | 0.45 | 0.24     | 0.25     | 0.62     |
| Nav. Int. 24       | 53 | 0.44   | 0.46 | 0.18     | 0.31     | 0.62     |
| Doctor             | 53 | 3      | 2.98 | 1.15     | 2        | 4        |
| Jobs               | 53 | 3      | 2.62 | 1.00     | 2        | 3        |
| Legal              | 53 | 3      | 2.83 | 1.14     | 2        | 4        |
| Nav. Quiz          | 53 | 3      | 3.00 | 0.98     | 2        | 4        |
| Female             | 53 | 1      | 0.92 | 0.27     | 1        | 1        |
| Schooling          | 53 | 3.06   | 2.74 | 0.78     | 2.30     | 3.25     |
| Age                | 53 | 2.16   | 2.20 | 0.76     | 1.71     | 2.45     |
| Residency          | 53 | 0.11   | 0.21 | 0.21     | 0.05     | 0.32     |
| Shared Language    | 53 | 0      | 0.00 | 0.00     | 0        | 0        |

Aggregates rescaled to 0-1 range, individual variables range from 1 to 5.

Schooling, Age, and Residency are coded in standard deviations of the pooled data.

SD Schooling = 5.22y, SD Age = 17.55y, SD Residency = 18.98y

**C. Correlations between questions and indexes.** Below we show how each question correlates (Pearson correlation coefficient) with the IPL-12 and IPL-24 integration indexes.

**Table S8. Correlations between individual questions and Integration Indexes**

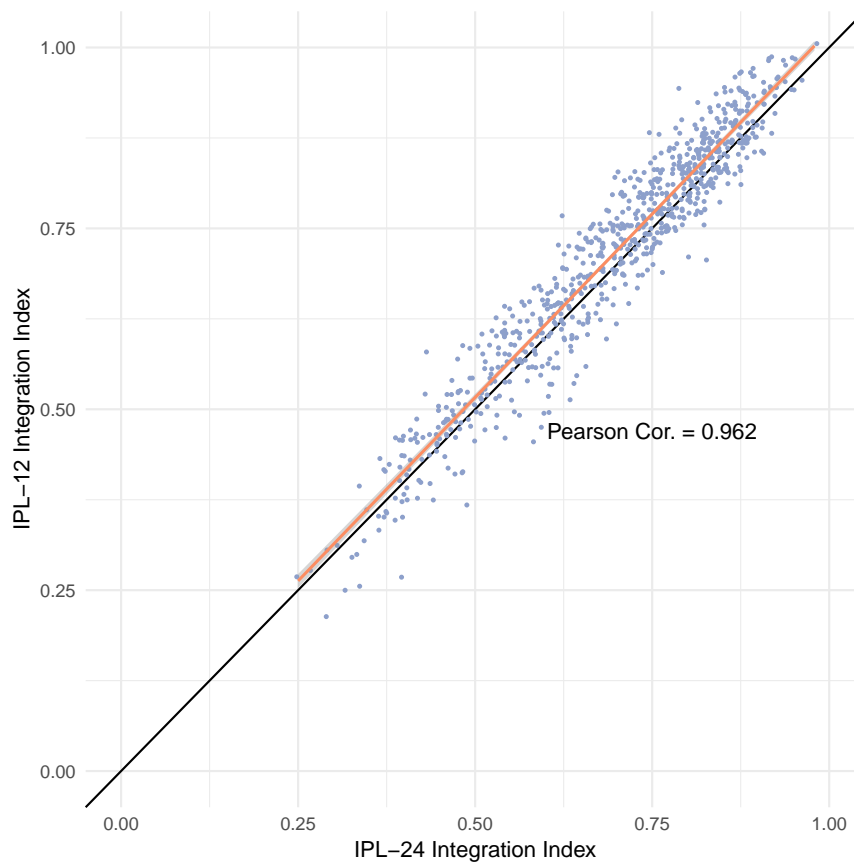
| Question           | IPL.12 | IPL.24 |
|--------------------|--------|--------|
| Connectedness      | 0.490  | 0.480  |
| Outsider           | 0.370  | 0.340  |
| Future             |        | 0.290  |
| Isolated           |        | 0.350  |
| Read               | 0.650  | 0.670  |
| Speak              | 0.690  | 0.700  |
| Write              |        | 0.690  |
| Listen             |        | 0.690  |
| Income             | 0.590  | 0.590  |
| Employment         | 0.350  | 0.270  |
| Expenses           |        | 0.570  |
| Empl. Satisfaction |        | 0.450  |
| Understanding      | 0.670  | 0.650  |
| Discuss            | 0.650  | 0.620  |
| Pol. Quiz          |        | 0.610  |
| Pol. Action        |        | 0.590  |
| Dinner             | 0.490  | 0.460  |
| Contacts           | 0.580  | 0.550  |
| Organizations      |        | 0.390  |
| Favors             |        | 0.270  |
| Doctor             | 0.590  | 0.580  |
| Jobs               | 0.640  | 0.620  |
| Legal              |        | 0.620  |
| Nav. Quiz          |        | 0.540  |

**D. Survey Time.** For samples A & B (USA/YouGov and Germany), we recorded the time it took respondents to answer individual questions. Based on these measurements, we estimate the median response time for the full IPL-12 instrument to be between 2 and 3 minutes and the median response time for the full IPL-24 instrument to be between 7 and 8 minutes (see table S9).

**Table S9. Minutes it took respondents to answer all IPL-12/24 questions**

| Sample  | Instrument | N   | Mean  | SD    | Min  | Median | Max      |
|---------|------------|-----|-------|-------|------|--------|----------|
| Germany | IPL-12     | 239 | 3.39  | 3.84  | 0.33 | 2.52   | 43.49    |
| Germany | IPL-24     | 239 | 8.92  | 5.78  | 1.17 | 7.50   | 46.10    |
| YouGov  | IPL-12     | 406 | 3.40  | 9.81  | 0.42 | 2.13   | 154.97   |
| YouGov  | IPL-24     | 406 | 11.97 | 58.60 | 1.16 | 6.87   | 1,161.95 |

**E. Similarity between IPL-12 and IPL-24 scores.** In the main paper we mainly focus on the short-form IPL-12 measure. While we find that the long-form IPL-24 measure offers more precision (see smaller standard errors in Table S10) and offers a broader set of questions for further analysis, Figure S7 shows that little information is lost if the short-form measure is used instead of the long-form measure.



**Fig. S7.** Jittered scatter plot of the long and the short form measure. The orange line represents a linear fit, the black line 45 degree line.

**F. Replications of main results.** All results presented in the main paper are either based on the IPL-12 or the IPL-24 score. In this section, we replicate all presented findings for both measures.

**F.1. Contrasted groups.** Figure 1 in the paper shows the distribution of IPL-12 scores in the four different samples. Figure S8 compares these distributions to the distributions of the longer IPL-24. The boxplots show that the measured integration levels based on the IPL scales reproduce the ordering of the samples from highest to lowest expected levels of integration.

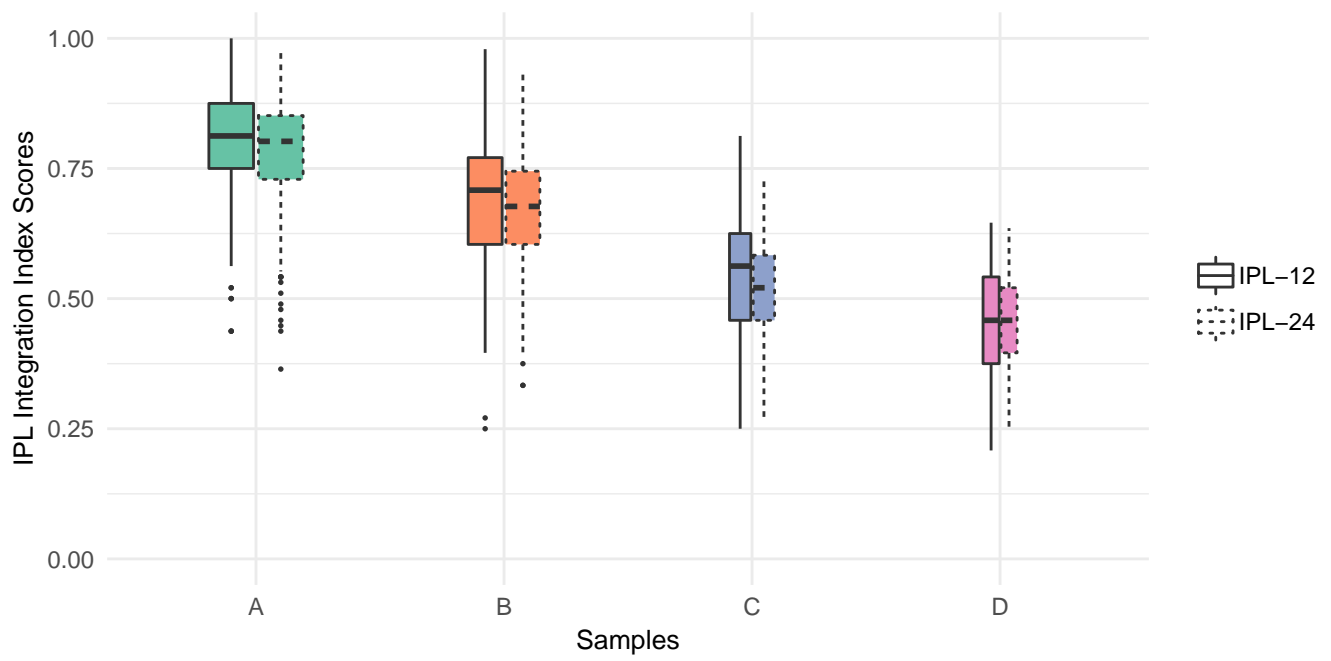
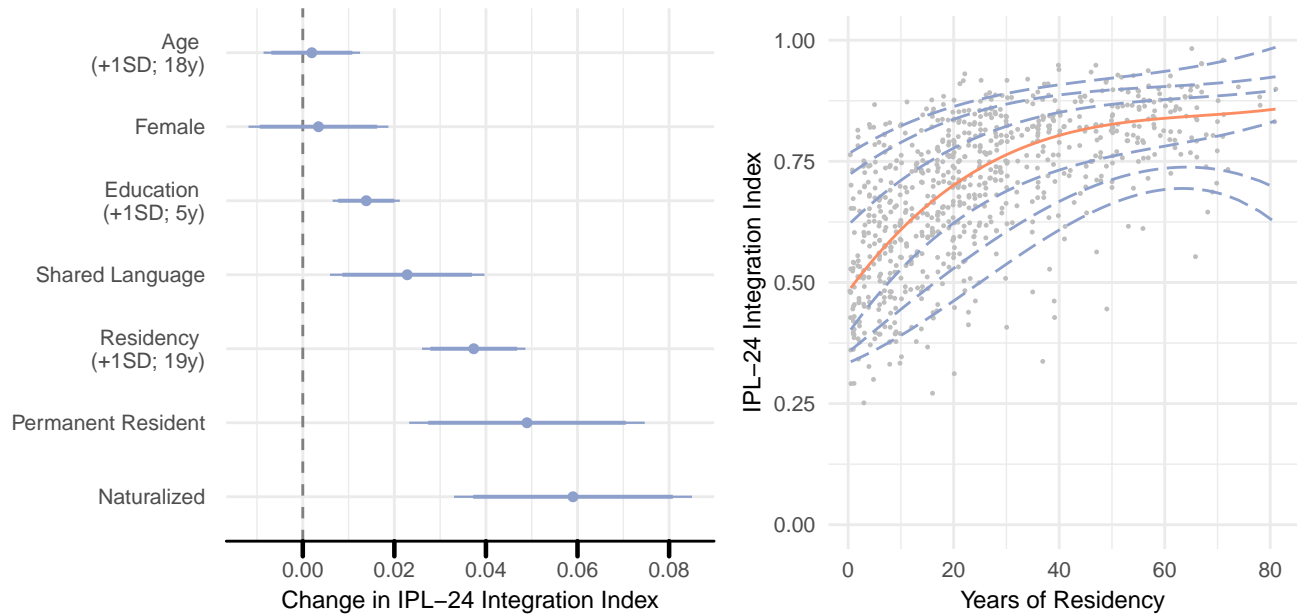


Fig. S8. Distribution of IPL Integration Index scores in four contrasted samples.

**F.2. Correlations.** The left panel of Figure 2 in the paper shows the relationships between IPL-12 scores and predictors of integration. The right panel shows a scatter plot between the IPL-12 scores and years of residency; lines show how the percentiles of the IPL score distribution change with residency. Table S10 shows the full output of the regression model used for the left panel of Figure 2 in the paper. The table also shows the full results of the same model run with the IPL-24 score instead of the IPL-12 score. Figure S9 replicates Figure 2 from the paper for the IPL-24 score.



**Fig. S9.** Relationships between IPL-24 scores and predictors of integration. Left panel shows marginal effects from a regression of IPL-24 scores on predictors of integration. Dots indicate point estimates and lines 95% confidence intervals. Right panel shows a scatter plot between the IPL-24 scores and years of residency; lines show how the percentiles of the IPL score distribution change with residency. Lines are drawn for the 5th, 10th, 25th, 50th (orange), 75th, 90th, and 95th percentile, respectively.

**Table S10. Full regression output for coefficient plots**

|                                | <i>Dependent variable:</i> |                       |
|--------------------------------|----------------------------|-----------------------|
|                                | IPL-12 Score rescaled      | IPL-24 Score rescaled |
|                                | (1)                        | (2)                   |
| Sample B (Germany)             | -0.062***<br>(0.012)       | -0.056***<br>(0.011)  |
| Sample C (New York)            | -0.196***<br>(0.016)       | -0.190***<br>(0.015)  |
| Sample D (San Jose)            | -0.245***<br>(0.019)       | -0.224***<br>(0.016)  |
| Permanent Resident             | 0.056***<br>(0.016)        | 0.049***<br>(0.013)   |
| Naturalized                    | 0.064***<br>(0.016)        | 0.059***<br>(0.013)   |
| Female                         | 0.002<br>(0.009)           | 0.003<br>(0.008)      |
| Education (+1SD; 5y)           | 0.014***<br>(0.004)        | 0.014***<br>(0.004)   |
| Age (+1SD; 18y)                | -0.001<br>(0.006)          | 0.002<br>(0.005)      |
| Residency (+1SD; 19y)          | 0.033***<br>(0.007)        | 0.037***<br>(0.006)   |
| Shared Language                | 0.016*<br>(0.010)          | 0.023***<br>(0.009)   |
| Constant                       | 0.628***<br>(0.026)        | 0.596***<br>(0.023)   |
| Observations                   | 787                        | 787                   |
| R <sup>2</sup>                 | 0.544                      | 0.613                 |
| Adjusted R <sup>2</sup>        | 0.538                      | 0.608                 |
| Residual Std. Error (df = 776) | 0.107                      | 0.093                 |
| F Statistic (df = 10; 776)     | 92.405***                  | 123.063***            |

*Note:*

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

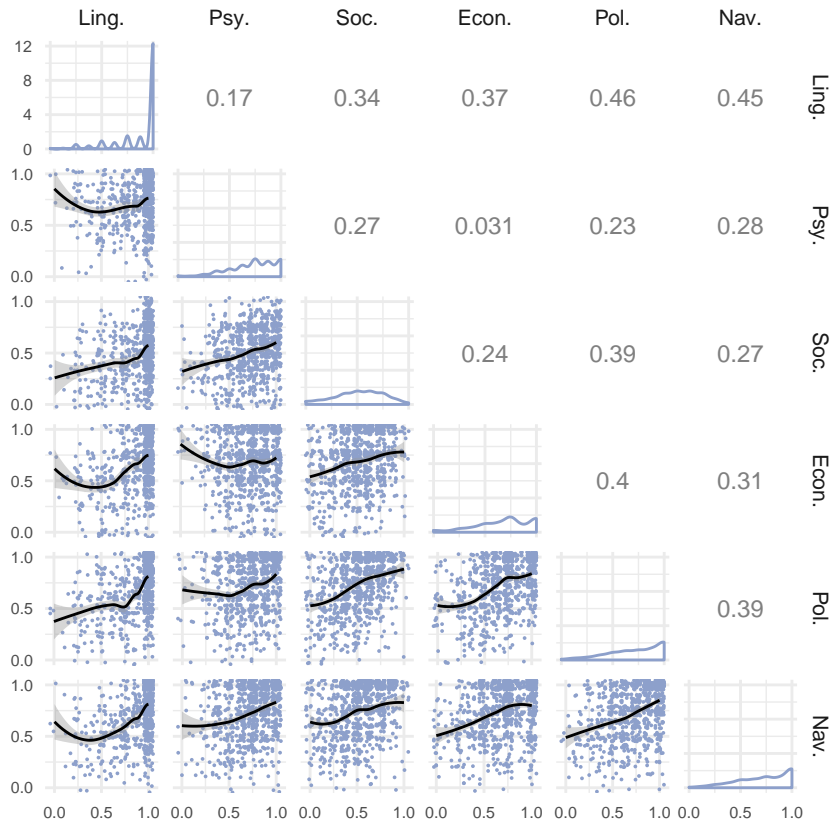
Robust standard errors in parentheses

Reference sample: sample A (U.S. high income)

Reference immigration status: temporary status



**F.3. Scatter-plot matrix.** Figure 3 in the paper shows a scatter-plot matrix of the IPL-24's six dimensions. Figure S10 shows the same graph using the IPL-12 score instead of using the IPL-24 score.



**Fig. S10.** Scatter-plot matrix for the six dimensions of integration as measured by the IPL-12 instrument (pooled sample, N=784). The panels in the main diagonal show the histograms of the marginal distributions, the panels above the main diagonal show the bivariate correlation coefficients, and the panels below the main diagonal show the scatter-plots with Loess lines (black).

**G. Instrument reliability.** Higher scores on our six sub-dimensions do not necessarily share a common cause, but together share the effect that they increase an individual’s ability to build a successful and fulfilling life in the host society. We therefore understand our measure of integration as an index or causal measure (63). The individual dimensions, however, measure consequences of underlying knowledge and capacities. They are more appropriately interpreted as effect indicators (63, 64). In this section we present two tests that are commonly used to assess the reliability of such indicators.

**G.1. Cronbach’s Alpha.** Cronbach’s Alpha (65) is a widely used conservative lower bound estimator of instrument reliability (63). The use of Cronbach’s Alpha to evaluate our economic integration scale can be questioned at least due to two reasons. First, two of our samples (A & C) were selected on income but not on employment. This means that the variation in income is limited by design. Similarly, sample C is restricted to students and thereby limited on the employment variable. Just considering sample B, the standardized Cronbach’s Alpha for the economic dimension is 0.54 for the IPL-12 Integration Index and 0.63 for the IPL-24 Integration Index. Second, income and employment are not necessarily effects of the same latent variable. We deliberately allowed this “weakness” because the importance of both indicators in policy debates outweighs issues arising from measurement error. Both points are more relevant for the IPL-12 than for the IPL-24.

**Table S11. Cronabach’s Alpha for each dimension of the IPL-12**

| Dimension     | Raw Alpha | Alpha’s SE | Std. Alpha | Guttman’s Lambda 6 |
|---------------|-----------|------------|------------|--------------------|
| Linguistic    | 0.92      | 0.01       | 0.92       | 0.86               |
| Political     | 0.70      | 0.02       | 0.71       | 0.55               |
| Social        | 0.59      | 0.03       | 0.59       | 0.42               |
| Economic      | 0.32      | 0.05       | 0.32       | 0.19               |
| Psychological | 0.66      | 0.02       | 0.66       | 0.49               |
| Navigational  | 0.70      | 0.02       | 0.71       | 0.55               |

**Table S12. Cronabach’s Alpha for each dimension of the IPL-24**

| Dimension     | Raw Alpha | Alpha’s SE | Std. Alpha | Guttman’s Lambda 6 |
|---------------|-----------|------------|------------|--------------------|
| Linguistic    | 0.96      | 0          | 0.96       | 0.95               |
| Political     | 0.77      | 0.01       | 0.78       | 0.74               |
| Social        | 0.58      | 0.02       | 0.60       | 0.53               |
| Economic      | 0.62      | 0.02       | 0.62       | 0.61               |
| Psychological | 0.81      | 0.01       | 0.81       | 0.80               |
| Navigational  | 0.77      | 0.01       | 0.76       | 0.74               |

**G.2. Scree Plots.** Eigenvalues and scree plots can be used to determine how many components (i.e. orthogonal linear transformations of the original items) of a principal component analysis one needs to retain in order to explain most of the original variance. The scree plots in figure S11 show that on all our sub-dimensions only one component has an eigenvalue > 1 (66, 67). The scree plots for social integration and economic integration show that the second components just barely fall short of an eigenvalue > 1. In the case of economic integration this is most likely explained by the the two underlying concepts of employment and income. In the case of social integration, we assume that our combination of formal (i.e. organizational membership) and informal social integration (i.e. social ties) is the reason behind the second component.

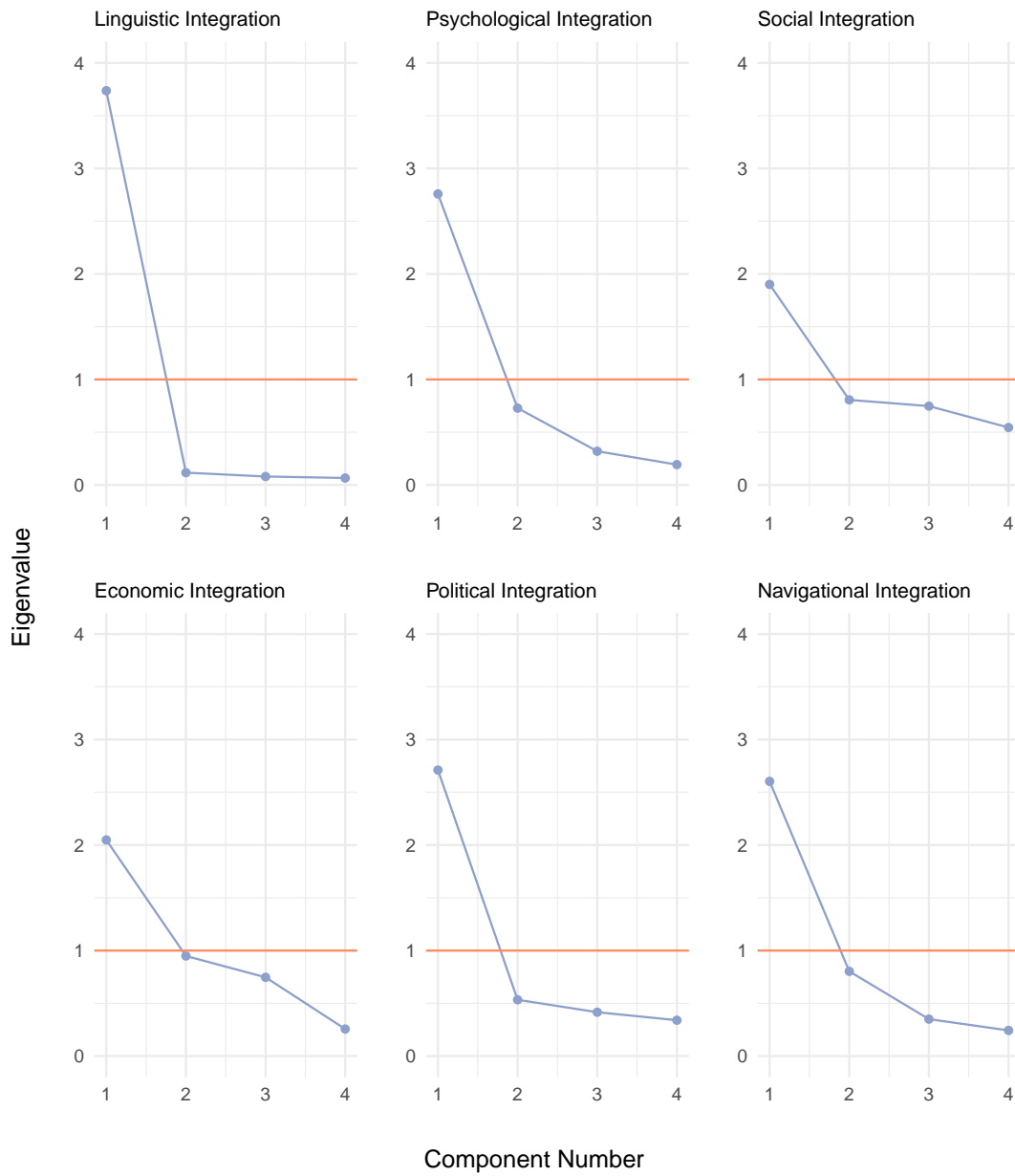
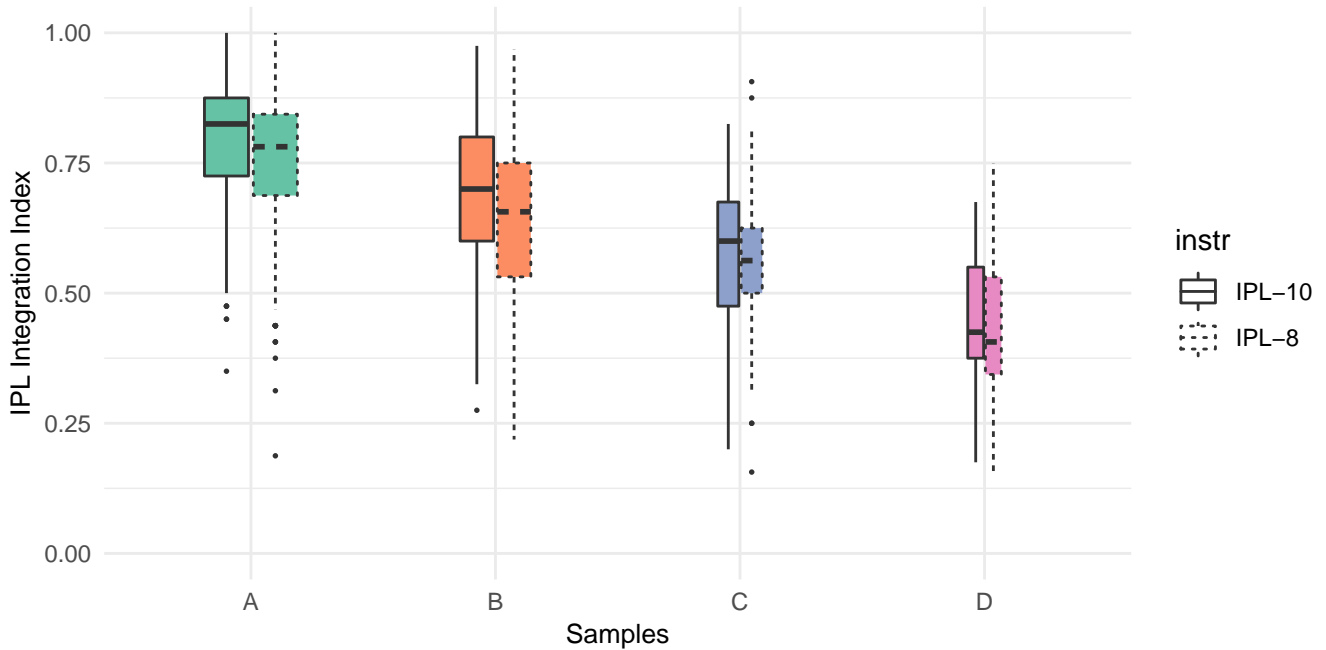


Fig. S11. Scree plots from principal component analysis of polychoric correlations for each sub-dimension of the IPL-24 Integration Index.

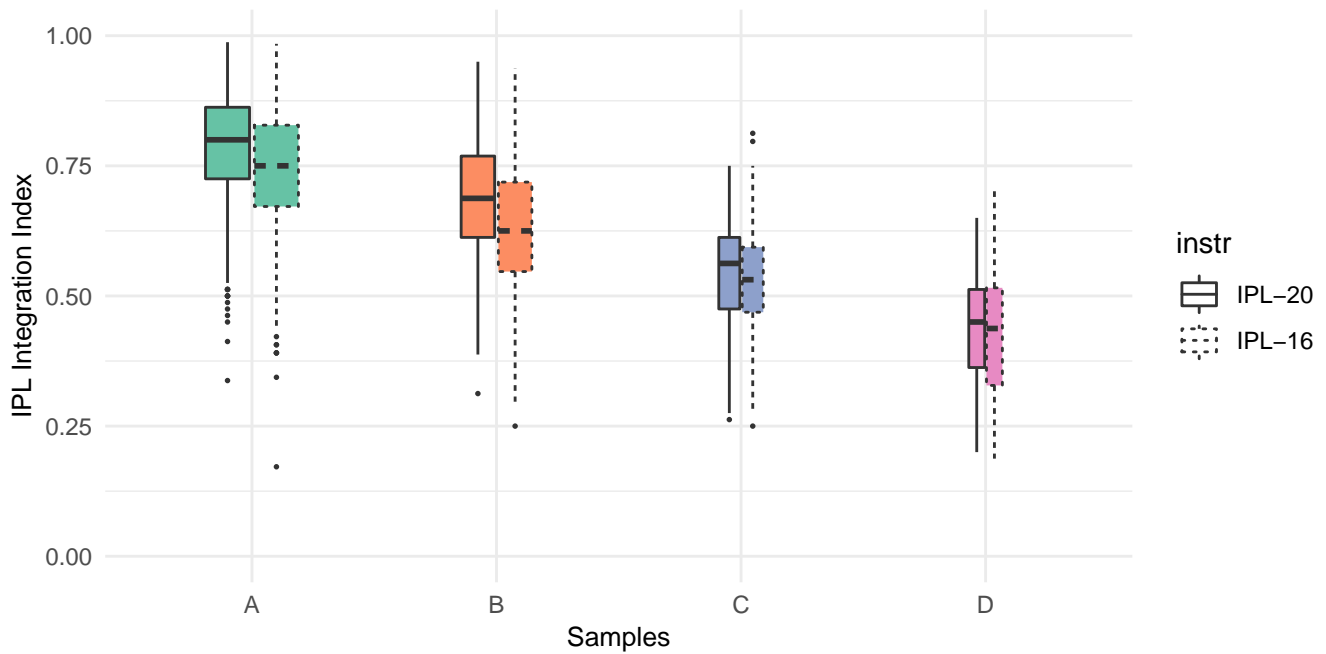
**G.3. Robustness to excluding dimensions.** Sample A was selected on above median household income and sample C was selected on low income and on a preference to answer previous online surveys in Spanish. Theoretically, the difference between groups could be driven solely by these two factors. Here, we present the box plot from the main paper using the re-scaled IPL-10/20 (excluding economic integration) and the re-scaled IPL-8/16 (excluding economic and linguistic integration). Figures S12 and S13 show that the order of means does not change if the two dimensions are excluded. We also use t-tests to analyze the differences in means of the four samples for the six different measures. Bonferroni corrected p-values are shown in tables S13 and S14. The p-values show that the difference in means of the the four samples is always significant. They also show that removing only economic integration from the measure does not lead to significant differences in the re-scaled score. Removing economic integration and linguistic integration, however, leads to significant differences in sample A and sample B.



**Fig. S12.** Distribution of IPL-10 and IPL-8 scores in four contrasted samples. The samples are ordered such that Samples A-D are decreasing in their expected levels of integration. The boxplots show that the measured integration levels based on the IPL scales reproduce the ordering of the samples from highest to lowest expected levels of integration.

**Table S13. Bonferroni corrected p-values from pairwise t-tests of short measure**

|          | A 12 | A 10 | A 8 | B 12  | B 10  | B 8   | C 12  | C 10 | C 8 | D 12 | D 10 |
|----------|------|------|-----|-------|-------|-------|-------|------|-----|------|------|
| A IPL-10 | 1    |      |     |       |       |       |       |      |     |      |      |
| A IPL-8  | 0    | 0    |     |       |       |       |       |      |     |      |      |
| B IPL-12 | 0    | 0    | 0   |       |       |       |       |      |     |      |      |
| B IPL-10 | 0    | 0    | 0   | 1     |       |       |       |      |     |      |      |
| B IPL-8  | 0    | 0    | 0   | 0.040 | 0.001 |       |       |      |     |      |      |
| C IPL-12 | 0    | 0    | 0   | 0     | 0     | 0     |       |      |     |      |      |
| C IPL-10 | 0    | 0    | 0   | 0     | 0     | 0.016 | 1     |      |     |      |      |
| C IPL-8  | 0    | 0    | 0   | 0     | 0     | 0.001 | 1     | 1    |     |      |      |
| D IPL-12 | 0    | 0    | 0   | 0     | 0     | 0     | 0.001 | 0    | 0   |      |      |
| D IPL-10 | 0    | 0    | 0   | 0     | 0     | 0     | 0     | 0    | 0   | 1    |      |
| D IPL-8  | 0    | 0    | 0   | 0     | 0     | 0     | 0     | 0    | 0   | 1    | 1    |



**Fig. S13.** Distribution of IPL-20 and IPL-16 scores in four contrasted samples. The samples are ordered such that Samples A-D are decreasing in their expected levels of integration. The boxplots show that the measured integration levels based on the IPL scales reproduce the ordering of the samples from highest to lowest expected levels of integration.

**Table S14. Bonferroni corrected p-values from pairwise t-tests of long measure**

|          | A 24 | A 20 | A 16 | B 24  | B 20 | B 16 | C 24  | C 20 | C 16 | D 24 | D 20 |
|----------|------|------|------|-------|------|------|-------|------|------|------|------|
| A IPL-20 | 1    |      |      |       |      |      |       |      |      |      |      |
| A IPL-16 | 0    | 0    |      |       |      |      |       |      |      |      |      |
| B IPL-24 | 0    | 0    | 0    |       |      |      |       |      |      |      |      |
| B IPL-20 | 0    | 0    | 0    | 1     |      |      |       |      |      |      |      |
| B IPL-16 | 0    | 0    | 0    | 0.004 | 0    |      |       |      |      |      |      |
| C IPL-24 | 0    | 0    | 0    | 0     | 0    | 0    |       |      |      |      |      |
| C IPL-20 | 0    | 0    | 0    | 0     | 0    | 0    | 1     |      |      |      |      |
| C IPL-16 | 0    | 0    | 0    | 0     | 0    | 0    | 1     | 1    |      |      |      |
| D IPL-24 | 0    | 0    | 0    | 0     | 0    | 0    | 0.003 | 0    | 0    |      |      |
| D IPL-20 | 0    | 0    | 0    | 0     | 0    | 0    | 0.001 | 0    | 0    | 1    |      |
| D IPL-16 | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 1    | 1    |

**H. Linguistic integration.** In our validation data the distribution of linguistic integration is skewed towards the top of the scale. This is to be expected, given that our surveys were mostly administered in the host country's dominant language and the average residency is 25.7 years in the host country. Pilot surveys 6 and 7 (see Table S2) were administered in several languages to immigrants with shorter residency. Figure S14 shows that the distributions of linguistic integration in those samples are significantly less skewed as expected.

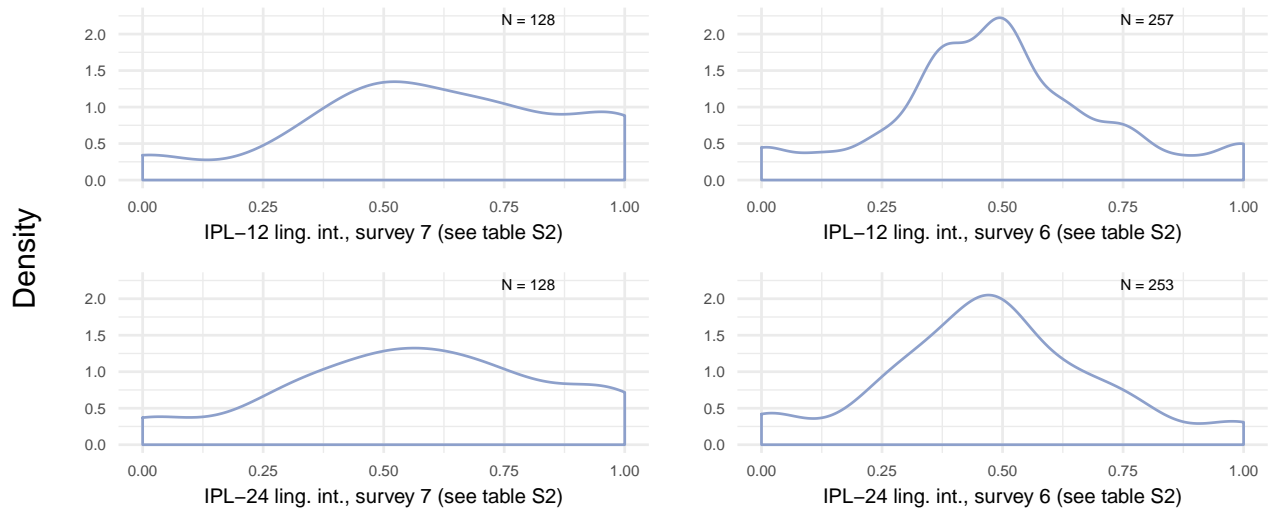


Fig. S14. Density plots of the rescaled IPL-12/24 linguistic integration elements from two pilot surveys. ys.

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