The Contributions of Language to the Economic Interests of the United States

Briefing paper for the Commission on Language Learning of the American Academy of Arts and Sciences.

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1. Executive Summary

This briefing paper provides an overview of some of the factors indicating the impact of language on the economy of the United States. Broadly stated, language, whether considered as a professional service, a commodity, or a type of human capital, provides at least $15b annually in terms of direct income to the economy of the United States, and provides meaningful, middle-class work for some 200,000 individuals. The language industry has grown at rates between 5% and 10% annually since 2004, despite the recession of 2008-2009.[1] Indirectly, the services provided by the language industry may leverage some $1.5 trillion in American overseas exports,[2] while enabling social services across the nation to more efficiently serve our growing immigrant and Limited English-Proficient (LEP) population, now estimated at some 8% - more than 25 million individuals – of all residents of the United States.[3] In terms of social services, growth in the provision of language services has been driven in large part by the civil rights mandate of language access under Title VI of the Civil Rights Act of 1964, and Executive Order

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[1] DePalma et al., 2015.
[2] Lawless & Fenstermacher, 2011.
[3] See the Migration Policy Institute's analysis of the 2013 American Community Survey Data: http://www.migrationpolicy.org/article/limited-english-proficient-population-united-states

13166,[4] reinforced by provisions of the Affordable Care Act that incentivize, at least indirectly, the provision of language services in health care settings.[5] However, the continued growth of the language industry, and therefore the growth of the clients it serves in the broader economy, is constrained by persistent and deep-set structural challenges in the educational systems of the US, which do not graduate nearly enough bilingual, biliterate professionals to meet the demands of the language industry and the economy at large.

In assessing the economic impact of language on the national interest, we examine the following factors:

- The aggregate demand for language services and the language industry's contribution to employment;
- The span of the language industry and how it serves the broader economy;
- The increasing integration of language and technology;
- The demand for linguistic and cultural human capital in the broader economy;

We then turn to the supply chain for language capital, and the ways that it constrains language-related growth in the economy.

[4] Brecht and Rivers, 2005
[5] DePalma et al., 2015.

2. The Aggregate Demand for Language Services in the US Economy

An aggregate assessment of the overall value of language to the economy can be estimated by examining the size of the language industry – its receipts and the employment it provides in the private and public sectors – as well as the leverage the industry provides in turn to its clients. We address specifics on the language industry in the next section; as noted in the executive summary, conservative estimates for the language industry place its annual receipts in the United States at roughly $15b, with some 200,000 Americans finding work in the industry; of these, more than 75% are self-employed.[6] To put these figures in context, the US Department of Commerce reports that the automotive parts industry employs some 3.62 million Americans, and had receipts of more than $225b in 2012.[7] As a rough estimate, the $15b receipts of the language industry account for approximately 0.1% (one tenth of one percent) of the US GDP of $16.7 trillion in 2013. Similarly, the estimated 200,000 translators, interpreters, teachers, and other professionals account for approximately 0.12% of the total labor force of the US.

Nevertheless, language leverages a significant amount of economic activity. The language industry serves all sectors of the US economy, with the manufacturing,

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[6] http://www.ibisworld.com/industry/default.aspx?indid=1446
[7] http://selectusa.commerce.gov/industry-snapshots/automotive-industry-united-states.html

information/telecommunications, education, financial and professional services, and health services seeing relatively higher volumes of use than other sectors. Growth in the language industry reflects growth patterns in the overall economy, in particular in the technology/internet sector and in health care.

With respect to the technology and Internet sectors, the continuing, exponential growth in content drives demand for language services. In 2013, some 571 websites, 100,000 tweets, 48 hours of video and 204 million emails were created each minute.[8] Moreover, this content is multidirectional (Business to Business, Business to Consumer, peer consumer networks, and so forth), global (nearly half of all internet users are now in Asia) and increasingly multilingual (while some 55% of the internet is estimated to be in English, growth in other languages outpaces growth in English).[9] Finally efforts to expand the number of commercially viable languages have been undertaken by large technology companies (Microsoft) as well as non-profits. The implications for the larger economy, at least with respect to language, are that:

- Commercial activity – and in particular, business to consumer activity – is increasingly likely to be conducted in the language of the consumer.
- This in turn drives direct use of the language industry to provide language and cultural services to the larger economy, as well as demand

[8] Lawless & Fenstermacher, 2011
[9] See http://www.internetworldstats.com/stats.htm

for linguistic and cultural human capital within companies, which we will address in section 4, below.

With respect to health care – among the largest sectors of the US economy[10] – language has become increasingly intertwined with the provision of health care services of all kinds. Presidential Executive Order 13166 of August 24th, 2000, requires all recipients of federal funding to comply with Title VI of the Civil Rights Act of 1964 with regard to Limited English Proficient (LEP) speakers:

> The Federal Government provides and funds an array of services that can be made accessible to otherwise eligible persons who are not proficient in the English language. The Federal Government is committed to improving the accessibility of these services to eligible LEP persons, a goal that reinforces its equally important commitment to promoting programs and activities designed to help individuals learn English. To this end, each Federal agency shall examine the services it provides and develop and implement a system by which LEP persons can meaningfully access those services … and thus [Federal agencies] do not discriminate on the basis of national origin in violation of Title VI of the Civil Rights Act of 1964. [11]

[10] See the Bureau of Economic Analysis: http://www.bea.gov/iTable/index_industry_gdpIndy.cfm
[11] *65 FR 50121* (August 16, 2000).

The Executive Order reiterates and clarifies earlier case law[12] to the effect that Title VI of the Civil Rights Act of 1964 prohibits discrimination based on a person's command (or lack thereof) of English, extending the prohibition of discrimination based on national origin.[13] Starting from 1999, the provision of language services to LEP individuals became a matter of compliance with federal Civil Rights law, with the important requirement that the language services were to be paid by the service provider. Insofar as the overwhelming majority of medical practitioners and facilities accept Medicare and Medicaid, they are recipients of federal funding, and thus covered by EO 13166 and Title VI of the Civil Rights Act.

In 2009, the passage of the Affordable Care Act added incentives to improve the quality of healthcare, two of which impinge on the language industry: hospitals treating patients ensured under ACA face stiff penalties for re-hospitalization, and they receive bonus payments for patient satisfaction. In both cases, the provision of interpreters to LEP patients correlates with economically meaningful and positive outcomes for the hospitals, in that re-hospitalization rates are lower for LEP individuals when language services are provided, and customer satisfaction rates are higher. Insurance companies also recognized that the subsidies provided to lower income Americans under the Affordable Care Act presented an opportunity to market the LEP population, which is disproportionately lower-income.[14]

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[12] Lau *v*. Nichols, 414 U.S. 563 (1974), Alexander *v.* Sandoval, 532 U.S. 275 (1999).
[13] Provision of language services for the Deaf is not addressed in this Executive Order, but rather by the Americans with Disabilities Act of 1990 (42 U.S.C. 12181 et seq.).
[14] See Zong, J., and J. Batalova. 2015, for data on the socio-economic status (SES) of the US LEP population.

These two sectors exemplify the growing role the language industry plays in the US economy. The next section details the extent of the language industry and the ways it is integrated into the broader economy.

3. The Span of the Language Industry

As a shorthand definition, the "Language Enterprise" encompasses everyone who enables communication among different cultures and languages. The Language Enterprise consists of a diverse range of sectors and verticals, serving nearly every part of the US economy. The Language Enterprise consists of:

- People and organizations directly engaged in enabling communication among different cultures and languages. These areas include:
  - Translators and interpreters;
  - Localization and transcreation professionals;[15]
  - Multilingual professionals, that is, professionals practicing their job in more than one language.
- People and organizations supporting those who are directly engaged enabling communication among different cultures and languages. Among others, these consist of:

[15] Localization refers to the process of ensuring that an existing product or service is appropriate culturally, linguistically, and in regulatory terms, to the market where it is sold. Transcreation, a relatively new term of art in the multilingual/multicultural marketing sector, refers to the process of adapting content to maintain the meaning, tone, and intent of the original, while creatively adapting its text and/or format.

- Language teachers from Pre-K through graduate school;
- Researchers in numerous disciplines (theoretical, applied, computational, and educational linguistics; educational policy and pedagogy; cognitive neuroscience, and others);
- Developers of language curricula and tests;
- Language engineers and computational linguists.

These individuals work in significant numbers – approximately 200,000 – in both the private and public sectors. In the private sector, well-organized verticals occur in the following areas:

- Translation/Interpreting;
- Globalization/Localization/Multilingual-Multicultural Marketing;
- Private language schools;
- Textbook, language learning apps and software.

Each of these divides into further areas of specialization, which we do not cover here.

In the public sector, language professionals are employed in the educational and government sectors. In the educational sector, we estimate approximately 150,000 teachers and researchers in K-12 and higher education.[16]

- K-12 programs
- Higher education faculty

[16] The American Council on the Teaching of Foreign Languages (ACTFL), estimates that there are 150,000 language teachers in the pre-K thru graduate levels.

In the government sector, the federal government employs several thousand individuals in training programs such as the Defense Language Institute, the Foreign Service Institute School of Language Studies (both of which enroll some 5,000 personnel each year in intensive language training), the Intelligence Language Institute, and the National Cryptologic School. These training programs support operational linguists (the federal term for individuals whose primary job responsibility is some type of language work), diplomats, and domestic law enforcement personnel. These federal professionals number in the thousands, although exact data are not available. State and local government agencies employ an unknown number of language-capable personnel in law enforcement, social services, and health care.

4. Language and Technology

The language enterprise is deeply intertwined with technology. Technological advances have been rapidly incorporated into language work, be it translation, interpreting, localization, teaching, or other fields. [17] The language industry depends on the technological advances of the 21st century. As it is impossible to manage the 21st-century content explosion without robust, constantly evolving technology, localization now is entirely digital, relying on workflow management systems, translation management systems, translation memories, terminology and

[17] See http://www.languagepolicy.org/wp-content/uploads/2013/11/LSTEM.pdf

data mining, sophisticated desktop publishing, content management systems, and machine translation, among other technologies. Human translators and interpreters no longer work primarily as the "engine" of language mediation, transferring meaning from one language to another. Rather, they work with computer-aided and automated language tools and alongside and as project managers, language engineers, editors, and others. In short, the technical nature of their work is high. Language teaching is also increasingly technologized, especially for "long-tail" languages in emerging markets like Africa and Asia. Finally, the language industry drives innovative R&D that cuts across STEM, the social sciences, and the humanities.[18] This virtuous cycle dates back to the 1950s, with the first developments of machine translation, to the television-delivered distance courses of the 1960s and 1970s, to the integration of a wide array of computational and internet-based tools into language work in the present day.

5. The demand for the global individual: Global Talent

In addition to the direct impact of language on the economy, as measured by the outputs and employment of the language enterprise, and the indirect leverage that the language enterprise has on the economy (and global security) the human capital of language and culture skills is increasingly important to the broader economy. In recent surveys in the United States and the United Kingdom, mid- and large-size companies express demand for linguistic and cultural human capital.[19] That is,

[18] See http://www.languagepolicy.org/wp-content/uploads/2014/08/Language-Tech.pdf
[19] For the UK data, see http://www.conversis.com/News/September-2015/Conversis-launches-Global-Talent-Report

companies across the economy now seek individuals with language skills, for a variety of reasons. According to the 2014 Employment Trends Survey of the Collegiate Employment Research Institute of the Michigan State University, some 11% of mid- and large-size US companies specifically seek individuals with language skills. The survey of Human Resource managers at 2,101 mid- and large-size companies asked companies to indicate their college and university recruiting priorities for the spring semester of 2015. In 2008, there were 90,386 mid-size and 18,469 large businesses in the US in 2008, according to the US Census Bureau; mid-size is defined as 100-500 employees and large as more than 500 employees.[20] As a rough estimate, assuming for the moment that the Michigan State Survey is representative of the overall population of roughly 109,000 mid- and large-size businesses, 11% projects to approximately 12,000 companies seeking individuals with language skills. Moreover, 55% of the respondents indicated that language skills are tracked in the respondent's company, and 45% indicated that hiring preferences are given to individuals with language skills. Additionally, 55% indicated that preferences are given to those with multicultural experiences.

The foremost business need for linguistic and cultural human capital, as cited by 21% of the respondents, is the need for employees to function in diverse teams. The next most cited need, at 14% of respondents, is the loss of business opportunities due to a lack of language skills. The industrial sectors where the need for language was greatest were, in order, energy extraction, manufacturing, professional services,

[20] United States Bureau of the Census, 2010.

and education and government. Geographically, demand for linguistically skilled individuals is concentrated on the coasts and in Texas. The jobs where language skills are most demanded include sales, customer support, and project management; these are typical entry-level professional jobs, which is the focus of the survey.

6. The supply chain

The supply chain for language expertise in the United States derives from five interrelated sectors: academic, federal, heritage, private, and overseas.[21] Academic language programs, from pre-K through graduate school, are limited by overall enrollments as well as the significant time required to achieve meaningful levels of skill. High-quality immersion programs typically graduate high-schools students at the 1+/2 proficiency threshold, as measured on the Interagency Language Roundtable proficiency scale.[22] These programs are few in number, albeit growing. College programs typically produce speakers at the same level, from four years of college study for *ab initio* learners. The Language Flagship, a program of the

[21] For an overview of the capacity sectors for language expertise and their outputs, see Brecht et al., 2015.

[22] The ILR Scales were initially developed in the late 1950s at the School of Language Studies of the State Department's Foreign Service Institute. The ILR Scales and the related proficiency guidelines of the American Council on the Teaching of Foreign Language have become the national standard for measuring language proficiency. The six point scale – from "0" (no language ability) to "5" (functionally equivalent to a well-educated, articulate native speaker) – places *professional* levels of language skill at the "3" level. The scale is not linear – that is, the "2" level requires exponentially more time and effort to reach than the "1" level. See the sources cited in Swender & Vicars, 2012.

National Security Education Program of the Defense Language and National Security Education Office (DLNSEO), reliably graduates college students at the 3 level. However, there are only 28 such programs, and their graduates number in the several dozens per year.

The federal sector of language supply consists of two major schools which provide initial language instruction, the Defense Language Institute (with its main campus on the Presidio of Monterey, and an office in the greater Washington, DC area for smaller languages and Foreign Area Officer/Attaché training) and the School of Language Studies of the U. S. Department of State's Foreign Service Institute, in Arlington, Virginia. The National Security Agency and the Central Intelligence Agency also have language schools; the National Cryptologic School at NSA generally focuses on maintenance and enhancement of language skills among the military and civilian workforce of the agency, while the Intelligence Language Institute of the CIA focuses on initial training of language as well as enhancement of language skills for CIA analysts and operators. Courses at all four are in an intensive format – five to six hours per day, five days per week. Basic language acquisition courses require from 24 weeks for languages easier for English speakers to learn, such as Spanish and French, to 63 weeks for Arabic, Korean, Chinese, and Japanese. The Defense Language Institute trains some 5,000 service members per year, and a similar number of US diplomats are trained at the School of Language Studies. The graduates of all of these schools go on to serve in the Federal government; their impact on the larger language capacity and on private sector employment comes, on separation from Federal service.

The heritage language sector consists of heritage language schools (typically run on weekends at community organizations such as religious and cultural institutions), as well as the language skills within the immigrant population itself. Heritage schools generally teach children of immigrants, and their existence and quality is often predicated on the availability of volunteer teachers. The United States Department of Education funds a National Heritage Language Resource Center under Title VI of the Higher Education Act; the mission of this center is to advance heritage language acquisition through research on heritage language acquisition, and training of educators in heritage language programs.

The constraints of the use of immigrant labor to meet the employment demands for linguistic and cultural human capital include the concomitant need for English proficiency and literacy as well as the need for additional professional skills, be they teaching, translation, interpreting, or another discipline to be practiced bilingually.

The overseas component of supply includes returned expatriates, such as returned Peace Corps Volunteers, children of expatriates who have been educated abroad, as well as participants in study-abroad programs. Returned expatriates vary in terms of their linguistic preparation, but are valued for their cultural experience. Study abroad, at least in countries where English is not the medium of instruction, continues to grow.[23] Individuals completing longer sojourns abroad are also seen as having valuable cultural expertise. Language skills from study abroad vary as a function of the time spent abroad; a semester abroad typically yields a “2” level on the ILR Scale, while an academic year abroad yields a “2+.”[24] Nevertheless, the number of Americans studying abroad in countries other than Australia, Canada, Ireland, New Zealand, and the United Kingdom is a minority of the overall study abroad population.[25]

The private sector of language supply consists of private language schools as well as language learning applications and software. The outputs of this sector and its size are not well understood.

7. Conclusions & directions

While the impact of language on the economy has deepened in the past fifteen years, the most striking change is that the language industry, and the major sectors of the US economy that it serves, face a major talent gap. The language industry continues to grow at 5%-10% per year, some 3-4 times faster than the overall U.S. economy, and is worth at least $15b per year, as noted above. Industry experts and observers

[23] See the *Open Doors* report of the Institute for International Education, http://www.iie.org/Research-and-Publications/Open-Doors/Data/US-Study-Abroad/Leading-Destinations/2012-14

[24] See Davidson, 2015, for an extended analysis of the inputs and outcomes of federally-supported overseas language programs.

[25] See the *Open Doors* report of the Institute for International Education.

expect this growth to continue, if not accelerate, due to the explosion in content, particularly from social media and the use thereof by major industry clients. Accordingly, there is an intense need for skilled professionals to meet this burgeoning demand for multilingual, multimodal, multidirectional communications. Among the language professionals in demand are translators and interpreters, who must possess professional levels of skills in at least two languages and must also be adept at using the modern technology that these professions now require. Skilled professionals are equally needed and scarce in the supporting business disciplines of the industry, to include IT, project and program management, customer relations, and business operations. These personnel all require high degrees of linguistic and cultural skills as well as other critical technical and business skills.

Of late, the intersection between FL and STEM, has attracted significant attention across industry and government, in particular in the White House Office of Science and Technology Policy. National educational policy has focused on increasing the STEM capacity of the educational system and increasing and retaining STEM graduates in the U.S. The argument advanced by advocates is essentially that language has, for some time, been part of STEM, or at least intersects with STEM disciplines in novel ways. Among these intersections are the increasing use of blended learning for FL programs; the high degree of technology use in translation, which as an industry relies on terminological databases, mixed stochastic and rule-governed machine translation, and crowd-sourced translations as enablers and adjuncts to human translators; and web-based conference interpreting.

Finally, because of the global nature of the language industry, individuals with these skill sets are in high demand worldwide and are not tied to any one locale. As a result, the U.S. language industry and its customers face fierce global competition for the available talent. As the language industry continues to grow at a 5-10% annual rate (well ahead of the growth of the U.S. economy and the U.S. workforce), so does concern that the U.S. education system is unable to develop and sustain capacity in foreign languages from kindergarten through college.

References

Brecht, R., and Rivers, W. 2005. "Language Needs Analysis at the Societal Level," In M. Long, (ed.). *Second Language Needs Analysis.* Cambridge: Cambridge University Press, 79-104.

Brecht, R. D., and Rivers, W. P., with Robinson, J. P., and Davidson, D. E. 2015. "Professional Language Skills: Unprecedented Demand and Supply," in Brown, N. A., and Bown, J., (Eds.). *To Advanced Proficiency and Beyond: Theory and Methods for Developing Superior Second-Language Ability.* Washington, DC: Georgetown University Press, 171-184.

Conversis. 2015. *Importance of Global Talent within International Business.* Bicester, UK. http://www.conversis.com/News/September-2015/Conversis-launches-Global-Talent-Report

Davidson, D. E. 2015. "The Development of L2 Proficiency and Literacy in the Context of the Federally Supported Overseas Language Training Programs for Americans," in Brown, N. A., and Bown, J., (Eds.). *To Advanced Proficiency and Beyond: Theory and Methods for Developing Superior Second-Language Ability.* Washington, DC: Georgetown University Press, 117-150.

DePalma, D., H. Pielmeier, R. Steward, & S. Henderson. 2015. *The Language Services Market: 2015.* Lowell, MA: Common Sense Advisory.

Institute of International Education. (2015). "Top 25 Destinations of U.S. Study Abroad Students, 2012/13 -2013/14." *Open Doors Report on International Educational Exchange*. Retrieved from http://www.iie.org/opendoors

Lawless, A., & Fenstermacher, H. 2011. Language drives economic growth, creates jobs, and fosters competitiveness for U.S. businesses. Testimony before the U.S. Senate Committee on Homeland Security and Governmental Affairs, Subcommittee on Oversight of Government Management, The Federal Workforce, and the District of Columbia.

http://www.hsgac.senate.gov/subcommittees/oversight-of-government-management/hearings/a-national-security-crisis-foreign-language-capabilities-in-the-federal-government, last accessed November 23, 2015.
Swender, E., and R. Vicars, 2012. *ACTFL Oral Proficiency Interview Tester Training Manual.* Alexandria, VA: American Council on the Teaching of Foreign Languages.
United States Bureau of the Census. 2010. *Statistics about Business Size.* http://www.census.gov/econ/smallbus.html, last retrieved 1/7/15.
Zong, J., and J. Batalova. 2015. "The Limited English Proficient Population in the United States." Washington, DC: Migration Policy Institute, http://www.migrationpolicy.org/article/limited-english-proficient-population-united-states, last accessed November 23, 2015.