

## **Lexical Distance and the Diffusion of Technology**

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### **Abstract**

This research shows that linguistic differences can obstruct the diffusion of technology and contribute to disparities in living standards between countries. I use a new measure of lexical similarity known as the normalized Levenshtein distance to show that language differences closely track bilateral differences in the adoption intensities of various economically important technologies. This relationship manifests across technologies in the transportation, information technology, steel, telecommunications, and health sectors. I estimate these relationships using member nations of the OECD, a group of countries with broadly similar institutional characteristics that account for over half of global GDP and trade. I then show that this variation in the intensity of technology adoption has important ramifications for aggregate living standards, as greater linguistic distances are also associated with greater bilateral differences in GDP per capita among OECD members. A plausible channel for these effects is via trade, as economic exchange is significantly reduced between pairs of countries with a higher lexical distance. These results hold more generally among high- but not low-income nations, likely because linguistic differences constitute a binding constraint on technology transfer only once a threshold level of development is surpassed.

**Keywords:** Language, Technology Diffusion, Economic Growth, Trade

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