

Universal Language Translation:  
The Impacts to Law Enforcement

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The Command College Futures Study Project is a FUTURES study of a particular emerging issue of relevance to law enforcement. Its purpose is NOT to predict the future; rather, to project a variety of possible scenarios useful for strategic planning in anticipation of the emerging landscape facing policing organizations.

This journal article was created using the futures forecasting process of Command College and its outcomes. Defining the future differs from analyzing the past, because it has not yet happened. In this article, methodologies have been used to discern useful alternatives to enhance the success of planners and leaders in their response to a range of possible future environments.

Managing the future means influencing it—creating, constraining and adapting to emerging trends and events in a way that optimizes the opportunities and minimizes the threats of relevance to the profession.

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## Universal Language Translation:

### The Impacts to Law Enforcement

On an evening patrol team, an officer responds to an emergency call for service. The dispatcher tells the officer she can hear arguing on the phone line in a language she does not understand. Despite the language gap, dispatchers continue to attempt to gather details; it may be a domestic violence call. The officer continues to the house even lacking the information that may be needed to effectively deal with the problem. As the officer arrives, he attempts to talk with several people at the location to understand the nature of the problem. He doesn't recognize the language and they can't understand what he is saying. Finally, the officer finds someone at the residence who understands English to start the process of finding out what happened and why they need the police. Unfortunately, this scenario occurs every day in cities across the nation. How is this effective, or even safe, when it comes to the delivery of service to communities? How will language translation be conducted in the future by the police and will organizations be able to avoid the scenarios like the one described in the future?

### Our Languages

The Modern Language Association published the results from a study conducted in 2005 that breaks down languages spoken in the United States. 80.6% of the population over the age of five years old speak English. That leaves almost 20% of the population that speaks other languages. Of the population that spoke a language other than English, 62% spoke Spanish. The next highest percentage was Chinese at 2.9%. The remaining breakdown is spread over nine

additional languages. (Modern Language Association Language Map) The data did not include all the languages spoken in the United States, but merely the most prevalent ones. With the influx of immigration, we are also not really able to count how many languages are spoken in the United States.

The idea of machine translation has been in literature and science fiction for years. The image of the universal translator like the one used in the science fiction TV show Star Trek is common dating back to the sixties. (Bosnor, 2001) C3PO, the metallic gold robot in the movie Star Wars, was described as a walking universal language translator that spoke six million languages. These are just a couple examples of references scattered throughout science fiction literature. But it's not just science fiction! President Clinton said in his final State of the Union address, "Again, we ought to keep in mind, government-funded research brought supercomputers, the Internet and communication satellites into being. Soon researchers will bring us devices that can translate foreign languages as fast as you can talk..." (President William Clinton State of the Union Address, 2000)

With the image of machine translation being so prevalent in media, literature and cinema, why have we not been able to build a system that makes speaking and understanding other languages seamless? To understand that, you have to look at language itself. The technology has a difficult time dealing with the complexities of language that humans handle naturally. Irregularities, ambiguity and multiple meanings of various words that depend on the content of the sentence to translate it make it both a worthy goal and a compelling challenge. (Pinker, 1994)

## The Technologies Today

Despite the difficulties overcoming the barriers to true translation software or machines that understand language, you don't have to look very far to see them in our lives. Some form of machine language occurs now every time you call customer service at any major company. How often do you have to say your account number to a machine or make simple requests that then get routed to various services? Cars, cell phones and computers are just a few of the technologies using voice recognition software in numerous languages as standard features.

Law enforcement uses two primary technologies related to language translation:

- The first are machines that use common phrases are pre-recorded in several languages. A small PDA style device, currently available to law enforcement through vendors such as ECTACO Speechguard, is programmed for use on routine incidents like gathering information for issuing a citation. ([www.speechguard.com](http://www.speechguard.com)) Although the device can be useful, it can not adapt to someone deviating from the script.
- Another common language technology is remote interpreting, using a third person such as the language line services. The service can be extremely useful for extensive interviews, but requires remote access through the internet or phone. Neither work well in uncontrolled incidents where people may not be cooperating with the police.

What police officers need, though, is true two-way translation technology that allows users to have conversations with people in a variety of languages with the use of a third party. (Susan

Shah, 2007) Law enforcement will experience an increasing demand by their communities to become more language fluent to overcome those barriers. They will also have to find ways to integrate the new technology into more portable devices for patrol functions. Other areas of the justice system will also experience the need to increasing language capacity as these same members of the community demand access to the courts.

As business, the military and the public drive the development of translation technology, where will we be in the future? The ability to talk to people in several languages because machines can understand what we say will undoubtedly have impacts on the users of the device as well as others in society. Used well, it can help to break down cultural barriers, enhance our ability to resolve conflict, and remove what may be the most significant hindrance to integrating immigrants into the fabric of America. All of these potentialities are already in the works.

### Emerging Translation Technologies

Can machines learn to understand and build on experiences that humans do every day? The Defense Advanced Research Projects (DARPA) is investing heavily in translation technology. They currently have developed programs that electronically listen to vast amounts of radio, television and phone traffic for key words and phrases. The difference is that the programs are sophisticated enough to detect numerous languages in a variety of dialects. (Jackson, 2003) The military is using a small hand-held device that can spit out phrases in Arabic for troops in the field. The intelligence community is using translation software to sift through materials that can be flagged for review, eliminating the need to recruit, hire and retain employees who are

fluent in a variety of languages. The investment in machine language translation has also been picking up speed in the last ten years due to demand in the private sector. Businesses want language translation technology to meet the needs of a workforce that is not dependent on any country's borders. Artificial intelligence or technology that can learn from its own interaction with the world will ultimately bridge the gap between having to program strings of words into a machine that can perceive the context of language. Even with the push in the area of language translation technology, the device that can make the communication seamless is not available yet.

Despite the trends, for a translator to be useful to a patrol officer, it will need to combine effective translation in a package that won't interfere with the officer's ability to handle a variety of complex incidents. Artificial intelligence or computers that are indistinguishable from humans in terms of thought and understanding, however, have proven to be elusive at best. Machines, in general, are not intelligent at all, and need to have humans do the input to get anything from them. (Halal, 2008) In fact, the future of language translation technology may rely less on a person and more on a machine as the technology improves.

Machine language technology could help remove one of the biggest barriers for law enforcement and assist them in communicating with all groups in the community. Technology that allows you to speak in one language and be heard in another could make it easier for a police officer to get the job done. In the future when calls come into a dispatch center and the caller does not speak English, the dispatcher will use a program that allows him or her to hear the caller

in English, instead of calling a third person to translate. The same program will allow the caller to hear the dispatcher in his or her native language. This would eliminate delays that compound throughout the call. When the officer arrives on scene, the officer will use the same type of system, but in a compact device that intergrates with the communication equipment. The officer would be able to speak and be understood in the moment and avoid time comsuming and costly delays. For officers or dispatchers who deal with a multitude of language issues every day, seamless translation would not only improve safety, but help with the delivery of those services.

In terms of translation, another hurdle that will need to be overcome is the interface between machine and the person using it. When someone thinks of language translation, most people would think of a box-like device that you talk into, and it comes out the other side in a different language and vice versa for the other person. Although there are simple versions of this technology out today that translate a word or phrase, some available on cell phones or through the internet, technology that can translate a conversation as it occurs is not available. For a language translation device to be useful for law enforcement, it will need to overcome that hurdle.

### Conclusion

Law enforcement agencies don't get to pick and choose who lives in the community, but they do have to provide some level of service to everyone despite possible language barriers. We must meet the needs of the people we serve and find the best way to bridge any gaps. The impact of universal or machine language translation technology on future law enforcement

agencies is yet to be fully determined, but it will certainly cause change. The technology could bridge the language gaps for a patrol officer, but it also could be resisted by some communities. Law enforcement will need to develop trust in communities that historically have not had a positive relationship with the police. Like the use of cell phones over the years, technology does not appear in its final form, but develops over time. As the technology develops the potential for grant opportunities for programs that integrate the technology will become more common and from those programs best practices will form. Agencies will need to understand ways to best utilize translation technology in their communities, adapting it to everyday situations as well as how to pay for it.

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