

Biotechnology, is there a future in law enforcement?

By

**Debbie Peecook
Napa Police Department**

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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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Officer John Martinez, a Hispanic officer with twelve years' experience, is responding to a domestic violence event on Main Street, Anytown, U.S.A. Martinez is advised by dispatch they are having difficulty determining what is occurring at this residence due to a language barrier, but they hear a male and female yelling at each other in the background. The fight apparently turns physical, then there is silence on the phone. As Martinez arrives on scene, he observes an Asian female sitting on the curb outside the residence. She is sobbing and bleeding from a head wound. She does not speak English or Spanish, the two languages in which Martinez is fluent. Is this female a suspect or a victim? Martinez's agency is progressive; they have a translation service he can access via a cellular phone for assistance, but they cannot determine what language this female speaks. Martinez can't adequately communicate with her; he cannot gain valuable information to be used for the investigation. Martinez is frustrated; he thinks back to the cultural diversity classes he has attended. Why, he wonders, didn't they prepare him for this, and for the rapidly changing demographics of their community? Martinez ponders whether there might be a technology that could be used to help.

Law enforcement's ability to effectively communicate with the people in the communities they serve is a critical concern for the police industry. Communication skills in policing continue to be a hot topic, especially when the differing cultures need police assistance, and crime victims cannot communicate with responding officers. According to Bharathi Venkatraman of the U. S. Department of Justice, policing is experiencing "a surge in police contacts with non-English speakers that has presented challenges for a variety of law enforcement functions" (Venkatraman, 2013). It is all too common for officers to be placed in these situations without the tools they need to effectively and efficiently perform their law

enforcement duties. Just like Officer Martinez, have you ever wondered if there is a technology to enhance an officer's ability to communicate with non-English speakers in the communities they are policing? Interestingly, there is.

Police Communication Skills Training

Officers responding to community needs will have contact with a variety of different personalities, cultures, mentally ill, alcoholics, and drug addicts; as well as those from a vast range of economic and educational backgrounds. Most officers are working in communities that are diverse in their demographics, often where several cultures live together and non-English speaking people working or visiting their communities.

In the last twenty years, communication skills such as “Verbal Judo” and “Cultural Diversity” are mandated; however, these classes are taught irregularly and updated training is rarely provided. These types of mandated training although different in content have been developed to assist officers with addressing the different people they come into contact with and to reduce complaints against officers and civil lawsuits. Communication skills in whatever form they are taught are perishable, you must believe in what you have learned and practice those skills for them to be effective (Keathly, 2012). Even though officers receive training in tactical communications, officers still have problems and receive complaints about failures to communicate with non-English speakers. The deficiencies in this area are realized because many communities have identified and complained that officers often times do not understand the cultures living in the communities in which they work and do not speak the immigrant's language. Many know the “different cultures” can speak some English, but might elect not to; what should we do about that, if anything (other than being able to surprise them by speaking in whatever language they assert they speak)?

Accurate communications across language barriers are challenging in critical situations. This is the most important time for officers to be able to accurately communicate to ensure the safety and protection of all involved. For instance, in Napa, California, there is a very large number of Hispanics living and working in the community. The Hispanic community is also diverse with first, second and third generation Hispanic and American citizens. Recent Hispanic immigrants all have different perspectives on law enforcement, families, school and church and may speak different dialects of the Spanish language although they all come from the same country.

According to ALTA translation services there are ten (10) major Spanish dialects spoken in around the world (ALTA, 2013). A tool that can provide officers not only with the ability to speak the immigrant's language but also understand the immigrant's culture would be the best of all worlds. The Spanish language has many different dialects; even Spanish speaking officers do not understand all dialects of the Spanish language when people often migrate to our nation from different regions of Mexico and other Spanish speaking nations. The Napa Police Department has developed relationships with the Hispanic Network and other community groups who periodically voice concerns about officers not being culturally diverse, and that they are not Spanish-speaking. The Hispanic Network has supported training in learning the Spanish language and look for the department to be trained in cultural diversity specific to Spanish speaking people. Training alone, though, is not enough. Of course, no amount of technology or training will meet each and every circumstance; there are, though, some emerging means through which we can become significantly more proficient.

Biotechnology to Enhance Translation (and more)

Computers, cellular phones, smart phones, cameras, drones and robots are just a few of the tools to which law enforcement has become accustomed. Science and the medical field have made phenomenal improvements, developments and changes in human performance tools. Prosthetics is a field that has expanded and taken off. We have seen prosthetics that have improved human performance it has changed the sports world as well as those that have been severely injured in the war, in traffic collisions or through illness. The next possible step in the use of applied technologies may be ones related to the implant or interface with devices that interact directly with the brain. Biotechnology may soon allow officers to be equipped in this way to improve and augment their perceptual acuity, cognition and communication skills. In recent years, biotech has produced advances such as ocular implants that allows blind patients to see (Boyle, 2011) or brain implants to restore their memory (Carey, 2011) The ultimate goal of some of this work is to develop memory implants for humans (Carey, 2011).

Science is still a long way from testing brain implants for memory restoration on humans (Carey, 2011). But reality for humans means that one day our memories and other cognitive processes can be augmented by brain chips (Young, 2012). Based on advances already seen, it would not be a stretch to envision an extension of current translation apps such as Google Translate to extend on dual-language translation to an ability to master and then use second and subsequent languages. Once it does, an officer in the field is truly equipped to communicate with whomever he or she contacts, and to enhance their own safety as a result. This concept might still sound fantastic to some; our military, though, is already working on ways to instantly translate any language.

The Broad Operational Language Translation Program (BOLT)

One of the challenges of military intelligence is that information collected is in multiple languages and dialects. Once analyzed, that information is then also commonly used in settings where that language or dialect must be used in real time. Like policing, the inability to overcome a language barrier often significantly impacts the communications process. The Defense Advanced Research Projects Agency (DARPA) provides support to the Department of Defense (DoD) by researching and developing innovative technologies that supports the DoD mission in strategic areas such as communications, electronic warfare and Foundational Strategic Technologies. One of DARPA's research programs to make an impact on this issue "went live" in October of 2011. This program is called "Broad Operational Language Translation (BOLT)", a five year program whose aim it is to enable communication with non-English speaking populations to:

1. Allowing English-Speakers to understand foreign-language sources of all genres, including chat and informal conversation.
2. Providing English speakers the ability to quickly identify target information in foreign-language sources using natural-language queries
3. Enabling multi-turn communication in text and speech with non-English speakers.

The DARPA program manager, Joe Olive has spoken of some of their successes, "We've achieved significant success with the Global Autonomous Language Exploitation (GALE) program, which has already developed software capable of translating formal news Arabic and more accurately on first pass than human translators." (DARPA, 2013) This project, BOLT accompanied by the DARPA I20 project that is developing technology to enable the warfighter to better understand the capabilities and intentions of their allies and adversaries using medical/bio informatics that change and empower a soldier so they may develop effective

strategies, tactics and plans for the success in whatever mission they are tasked with (DARPA, 2013).

If they are successful at the end of their program, they will develop natural language processing technologies that will allow the military and law enforcement to be able to instantly have cross cultural communications. Adapting BOLT and related translation programs for use in the field could be accomplished through traditional means of carry added equipment; it could also be transferred to biotech prosthetic technologies.

The Possibilities of Future Biotech Tools

Although the military is currently conducting research to rehabilitate soldiers who sustained traumatic brain injury during war, there is no work yet to extend that work to provide humans with a tool to instantly understand other cultures and be able to speak other languages. There are implanted brain chips, though, to improve memory, stabilize mental health patients to alter behavior, and similar neural tasks. This work repurposed to bridge the gap of language barriers seems a next natural step.

A New York professor, Gary Marcus believes that projects funded by DARPA will develop brain chips that will “improve human memory”. Marcus was quoted saying “ However difficult practicalities, there’s no reason in principle why a future generation of neural prosthetics could pick up where nature left off, incorporating Google-like maps into neural implants” (Watson, 2008). Marcus makes reference to another project that DARPA is developing utilizing neurotechnology. This project involves the development of technology that can read thoughts from the human brain and chips that create false memories (Watson, 2008). It is these types of projects that may allow science to develop other technologies, such as neural implants, to allow the human brain to instantly be able to understand and speak other languages.

Other evidence in the advancement of biotechnology is the use of brain implants to improve the quality of life for people with brain problems such as dementia, Alzheimer's and amnesia. Researchers discovered that sending impulses to different regions of the brain improved patients with Alzheimer's to increase their memory capacity. Each patient equipped with the technology experienced less deterioration than expected (White, 2011)

Having the ability for all law enforcement to communicate with the different cultures living, working and visiting communities will increase performance, productivity, reduce costs and increase community and officer safety. Technology has already made law enforcement more efficient, effective and proficient in many areas in many areas such as computers, cameras and voice recognition. Technological advances in human performance tools such as prosthetics, brain chips and medicine are currently being implemented and used that can change and improve behavior.

Projected Outcomes for Law Enforcement

Law enforcement wants to be on the forefront of utilizing new, innovative technological tools to enhance their ability to communicate and understand the cultures living in their communities. This may push agencies like DARPA to create technology that will enhance officer performance within this decade as other forms of artificial intelligence within the computer industry increases. Next steps for the science world will likely be developing technology that humans can wear or be implanted with that will give us greater power to communicate to different languages with cultures other than our own.

Education and training of officers in cultural diversity has not provided the answer that law enforcement searches for to change the perception of how the public perceives their performance. More and more non-English speaking cultures are moving to the United

States and into our communities. “Immigration is projected to be the key driver of the national population in the next coming half century” (Passel, 2008). Foreign born, Hispanic and Asian populations will continue to increase because of globalization and changing U.S. Immigration laws.

There are some roadblocks and barriers to developing bio-technology especially if the biotechnology takes the form of a brain chip or some other type of implant. The barriers which include the effect and impact public perception of officer performance, health concerns for officers, “big brother” perception, and concern about officer performance, cost and the ability to update technologies. These issues could be easily mitigated with education, testing and use of the technology.

Concerns in regards to the implementation of bio-technology that change and enhance peace officer performance in dealing with language barriers can be easily addressed with simple communication about the project; rules and regulations in the implementation and use of this type of technology. To gain public confidence law enforcement and science must immediately engage the public and the media with information about the tools that will dispel poor publicity and lower the confidence in the use of this type of technology. Science, law enforcement leadership, the community and health professionals will have to continually monitor the successes and failures of the implementation of this type of technology. Modifications will have to be completed in a timely manner to maintain the confidence of both the law enforcement community and the public. Technology will need to be updated at regular intervals to maintain a high level of success. Personnel needs and concerns must be addressed, be timely to ensure their confidence in the technology as well as to meet public service needs

Impacts of bio-technology in the future of policing are wide open. Law enforcement leaders must be aware of technologies and trends that will affect the future of policing. (CITE THIS) Societal demands for safe, cost effective, efficient and proficient law enforcement service is being demanded world-wide. Communications between peace officers and the public is being critically viewed by the public, the courts and law enforcement peers. Bio-technology developed and implemented to change officer performance has the potential to significantly change how peace officers communicate in the multi-cultural communities they serve.

Conclusion

The public and law enforcement will realize a reduction of officer complaints surrounding language barriers and cultural diversity issues, liability will be reduced and the community will regain confidence in policing efforts. Law enforcement has been exposed to different cases and real life examples of how language barriers can interfere and damage the principal purpose of police work. Examples such as a non-English speaking defendant's confession being suppressed because his Miranda warning was not provided in their native tongue confirm that we need to be able to communicate competently and not inaccurately. Biotechnology is a fast growing resource that is rapidly expanding. With ingenuity and a little help from science and technology departments can improve language access involving non-English speaking languages.

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